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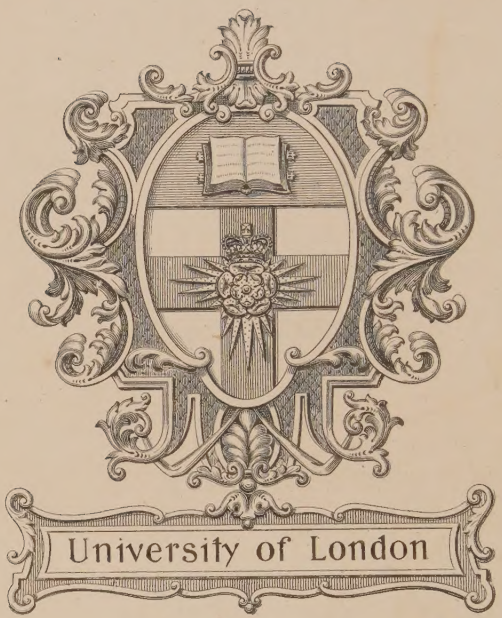

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REPORTS

FROM

COMMISSIONERS:

TWENTY-NINE VOLUMES.

—*(3.)*—

AGRICULTURAL LABOURERS (IRELAND) WAGES;
LANDLORD AND TENANT (IRELAND);
FISHERIES (IRELAND); HERRING FISHERIES;
OYSTER FISHERIES; SALMON FISHERIES.

Session

8 *February* —— 10 *August* 1870.

VOL. XIV.

The Papers [C. 225] [C. 166 A] [C. 79]
being folio, will be found in Vol XVII

REPORTS FROM COMMISSIONERS:

1870.

TWENTY-NINE VOLUMES:—CONTENTS OF THE

THIRD VOLUME.

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REPORTS

FROM

POOR LAW INSPECTORS

ON THE

WAGES OF AGRICULTURAL LABOURERS

IN

IRELAND.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1870.

[C.—35.] *Price* 2½*d.*

I.—REPORT FROM DR. KING.

District comprising nearly the whole of the County of Cork, and a small part of the Counties of Limerick and Waterford.

Cork, 31st December, 1869.

Gentlemen,—In accordance with your letter of instructions of the 17th instant, No. 191, M. 69, I have the honour to submit for your consideration the following report on the "wages and condition of the agricultural labourers" in that portion of Ireland included in the unions of Cork, Bandon, Clonakilty, Fermoy, Kinsale, Macroom, Mallow, Mitchelstown, Kilmallock, Midleton, and Youghal.

With respect to the increase of wages during the last twenty years, I have to report that labourers' wages have gradually advanced to their present rate, which is fully double what it was at the above period (1849).

The cause of the increase is referable to a variety of circumstances, the most prominent of which are—

Firstly. Emigration, which has drained off a vast amount of able-bodied labour. This cause, however, only operates in harvest time, or during spring, or at such times as agricultural operations are carried on with activity. At other priods of the year many hands are idle.

Secondly. The labouring class do not now subsist, to the same extent as formerly, on the potato. They were very generally in the habit of cultivating this plant themselves, but they now have to buy bread, and they have no refuse upon which they can feed a pig or fowl, and they have consequently no benefit from the sale of a pig, fowl, or eggs.

Thirdly. The diminished value of money and the consequent advance in the price of all the necessaries of life.

With respect to the present rate of wages of labourers, when employed by the year or week, it varies in different localities, being in general higher in the vicinity of large towns, than in more remote districts.

Sometimes the agreement is for £8 or £10 a year and food. This arrangement is generally adopted with labourers who reside with their employers.

By the week the usual wages are from 7*s.* to 10*s.* without food, or from 3*s.* to 6*s.* a week with food, consisting of two meals a day for six days in the week.

In distant parts of the country, if the higher wages be paid, the labourer is charged rent for his cabin and potato garden.

When employed by the day, the wages vary from 1*s.*, which is the lowest, to 2*s.* 6*d.*, or even 4*s.*; but these high wages are only paid in harvest time to mowers or reapers when the weather is favourable, and a pressure on the labour market makes hands scarce—probably 1*s.* 6*d.* a day may be taken as the average rate of wages of labourers employed by the day and not receiving any food.

As to contentment, it may be stated the agricultural labourers, as a class, are most discontented. They constantly complain and grumble, and each successive year demand a higher rate of wages, and even when this is acceded to, they still seem dissatisfied, and their employers complain that they are unwilling to do a fair day's labour for a fair day's pay.

The discontent of agricultural labourers seems to arise from many circumstances, which all combine to render him dissatisfied with his position.

Firstly,—A want of constant employment.

Secondly,—The wretched miserable cabins they have to live in, and for which occasionally they have to pay high rents, considering the accommodation afforded.

Thirdly,—A knowledge of the high wages received by their friends or relatives in America, and a strong and earnest desire to emigrate; and

Lastly,—From expectations raised in their minds by popular writers and speakers, which never can be realised, so long as there are to be both rich and poor in the land.

I have the honour to remain,

GENTLEMEN,

Your obedient servant,

CHARLES CROKER KING.

To the Poor Law Commissioners.

P.S.—In some parts of the country, farm labourers, when engaged by the year, are allowed grazing for one or two sheep, or if the farm is in the vicinity of a seaport, they get a ton or so of coals; but these practices are principally confined to labourers employed by the gentry.

II.—REPORT FROM DR. KNOX.

Comprising the County of Antrim and parts of the Counties of Armagh, Down, Londonderry, and Tyrone.

Beechcroft, Belfast,
January 3rd, 1870.

Gentlemen,—I have the honour to state, in reply to your communication, regarding the wages and condition of the agricultural labourers in Ireland, for your information, and for that of the Government, that, after due inquiries, added to my own personal knowledge, from long residence and acquaintance with every part of my district of supervision, I am in a position to make the following replies to the three queries transmitted to me on the subject, which I believe to be as accurate as the circumstances will admit of, and, on the whole, substantially correct.

With regard to the first and second queries, viz.:—

I. "What has been the increase in the wages of the agricultural labourer, generally, in Ireland during the last twenty years? and

II. "What is about the present rate of wages of an agricultural labourer if employed (*a*) by the week, or longer period, or (*b*) if employed by the day?"

I have to state, as regards my own district of supervision, comprehending sixteen poor law unions, and extending over the whole of the county of Antrim, and large proportions of the counties of Down, Armagh, Londonderry, and Tyrone, that the increase of wages, within the period stated, has been both great and general, and it might fairly be stated, on the average, to amount to one-third of the whole, showing an advance from 1*s.* to 1*s.* 6*d.* per day. In the remote parts of the district the average may be a little less than the last mentioned rate, and in other instances somewhat greater, as in the vicinity of the principal towns, especially Belfast, where it ranges from 1*s.* 8*d.* to 2*s.* per day, or even more; at particular seasons of the year, as in haytime and harvest, wages rise frequently to 2*s.* 6*d.* and 3*s.* a day, and occasionally even higher. Skilled labour also commands a higher rate than the ordinary wages, as, for instance, a competent ploughman will frequently obtain from 10*s.* to 14*s.* a week for the half year, but in this is included a house and small garden, valued at from £3 to £4 per annum, for which, however, his employer takes credit, and deducts this amount from the stipulated wages. Most of the married labourers are thus provided with residences, but un-

married men very generally receive board and lodging in the houses of their masters, in addition to which, they receive a money payment varying from about £5 to £9 or £10 for the half year (which is the customary period of their engagement), according to their qualifications and capability as workmen. There is not any material difference in the wages of a labourer, whether engaged by the week or a longer period.

In reply to the third query, "Are the agricultural labourers, as a class, contented?" I beg leave to say, that as far as my observation, corroborated by the great majority of the returns made to me extends, I think it may be fairly stated, as the general result, with perhaps some few partial exceptions, that, as a class they are contented with their position; and it may probably be considered, not without reason, as their wages, as before shown, have very materially increased within the last quarter of a century, whilst the prices of the greater number of the articles of their consumption are moderate.

Any complaint on the score of labour is heard principally amongst the farming classes, as they consider the cost high, whilst in certain seasons labourers are difficult to obtain, as a considerable proportion of the population has been absorbed by emigration and manufacturing occupations.

I annex a table compiled from returns made to my inquiries, setting forth in detail the information condensed in the report.

I have the honour to remain,

Gentlemen,

Your obedient servant,

ALEXR. KNOX, P.L.I.

The Poor Law Commissioners, &c.

[TABLE,

SCALE OF WAGES.

Name of Union.	Increase of Wages in last 20 Years.	Present Wages.			State of the Agricultural Population.	
		By the Week.	By the Day.	By the Half Year, with Board and Lodging.	Contented.	Not Contented.
	Per week.	*s.* *s.*	*s.* *d.* *s.* *d.*	£ £		
1. Antrim, . .	3*s.* to 5*s.* said to be 50 per cent.	8 to 12	1 4 to 2 0	5 to 7	Yes.	—
2. Ballymoney, .	about 5*s.* said to be 100 per cent.	about 10	1 8	5 to 7	Yes.	—
3. Banbridge, .	2*s.* 6*d.* to 3*s.*	7 to 9	1 4 to 1 6	5 to 7	—	Not.
4. Ballycastle, .	about 4*s.*	8 to 9	1 4 to 1 6	5 to 8	—	Not.
5. Ballymena, .	about 3*s.* said to be 60 to 70 per cent.	10	1 8	5 to 8	Yes.	—
6. Belfast, . .	about 3*s.* 6*d.*	10 to 14	1 8 to 2 4	6 to 10	Yes.	—
7. Cookstown, .	about 5*s.*	10 to 12	1 8 to 2 0	5 to 7	Yes.	—
8. Coleraine, .	about 5*s.*	about 9	1 6	7 to 9	Yes.	—
9. Dungannon, .	about 4*s.* said to be 50 per cent.	about 8	1 4	5 to 6	—	Not.
10. Downpatrick, .	about 4*s.*	8 to 9	1 4 to 1 6	6 to 7	Yes.	—
11. Larne, . .	about 3*s.* 6*d.*	8 to 10	1 4 to 1 8	6 to 9	Yes.	—
12. Lisburn, . .	about 5*s.*	9 to 10	1 6 to 1 8	5 to 7	Yes.	—
13. Lurgan, . .	about 3*s.*	9 to 12	1 6 to 2 0	5 to 7	Yes.	—
14. Magherafelt, .	about 2*s.* 6*d.*	about 8	1 4	5 to 6	Yes.	—
15. Newtownards, .	about 3*s.*	about 9	1 6	5 to 7	Yes.	—
16. Newtownlimavady.	about 3*s.* 6*d.* said to be 75 per cent.	about 9	1 6	4 to 7	Yes.	—

III.—REPORT FROM MR. ROBINSON.

District comprising nearly the whole of the County of Dublin, the County of Wicklow, and parts of the Counties of Carlow, Kildare, Kilkenny, Meath, Queen's County, and Wexford.

Dublin, 6th January, 1870.

Gentlemen,—In accordance with the instructions contained in your letter of the 17th ultimo, I have the honour to submit to you the following report regarding the wages and condition of the agricultural labourers in my district.

With reference to the first query—What has been the increase in the wages of the agricultural labourer, generally, during the last twenty years? I may state that from the best information I can obtain, I believe there has been an increase of about 50 per cent.

In the year 1850, the average rate of wages for agricultural labour in the counties into which my district extends, was about 5*s.* a week; between that time and the year 1854 there was a rise of about 1*s.* a week, and 6*s.* was then the standard; since that time there has been a further and gradual advance, and at present the average rate throughout this district may be quoted at about 7*s.* 6*d.* a week. The wages I have named must be understood to be the wages of agricultural labourers who are neither housed nor dieted by those for whom they work, but the labourers in this country are not all paid in the same manner; there are those who receive all their wages in cash; others reside rent free on the land of, and in the houses belonging to, their employers; and some are given their diet, with a proportionate reduction in their money wages. I think it advisable, therefore, in reporting the result of my inquiries on this subject, to set forth the scale of payment to each of these classes, and the following are the average rates:—

Wages of an agricultural labourer who does not receive diet from, and is not allowed a house by, his employer—

If employed by the day, 1*s.* 4*d.* per day.

If employed by the week, or longer period, 7*s.* 6*d.* per week.

Wages of a labourer who is allowed a house by his employer, 6*s.* 6*d.* per week.

Wages of a labourer who receives diet from his employer, 4*s.* per week.

This return is intended to represent the general average rate of wages at present throughout this district, but in the neighbourhood of Dublin it is much higher than in other localities, amounting to 9*s.* and sometimes 10*s.* a week, while in some counties the average weekly rate is not much above 6*s.*; and, further, the exceptional and temporary increase during harvest time is not taken

into account; wages then vary considerably in different places, and labourers at that season have obtained 3*s.* 6*d.* a day; women are also very well paid then, and I have heard of their earning 2*s.* 6*d.* a day for a short time last summer.

In reply to the question whether the agricultural labourers are, as a class, contented, I regret to say that the majority of the persons I have consulted on this point consider that such is not the case; and I have asked for information in every union in my charge, from those who appeared to me to be competent to form a just opinion on the subject.

Different causes have been assigned for this discontent, but the two principal reasons appear to be the uncertainty of work in winter, and the manner in which these people are housed. Those who work for owners cultivating their own lands, and for some of the tenant farmers, who hold extensive farms, are often provided with suitable, well-built cottages, and are regularly employed, and labourers so circumstanced are, as far as I can learn, contented, and have no sufficient cause to be otherwise; but this is not so with a large proportion of the labouring population. In spring and harvest time the demand for labour is often greater than the supply, and very high wages may then be earned, but in the winter season work in many places is scarce, and want of constant employment is a frequent and well founded source of complaint. Many of their houses are of the worst description, and sometimes far from their work, and there is a universal desire on the part of labourers to procure houses on the land of their employers, with ground enough to grow vegetables. This is an arrangement which, as I mentioned before, exists already to a certain extent, but it is one that will probably become every year more general, for farmers find that if they have not workmen living on their land they cannot always secure their services at seasons when there is a scarcity of hands, and when labour is dear. And, although landlords are much opposed to permitting their tenants to create a class of cottier sub-tenants, they are now usually willing to allow a limited number of cottages to be erected for such labourers as are necessary for the working of the farms.

While the agricultural labourers in this country have still some disadvantages and difficulties to contend with, I think that, viewing their condition at the present time, and contrasting it with their circumstances years ago, there can be no doubt that, on the whole, a material improvement has taken place. There has certainly been a considerable rise in the prices of food, but the increase in the cost of living is not equivalent to the advance in wages, and I believe that labourers are now, as a class, more independent, more comfortably clothed, and in a better position, in regard to their earnings and means of subsistence, than formerly was the case.

I have the honour to be, Gentlemen,

Your obedient servant,

HENRY ROBINSON.

To the Poor Law Commissioners.

IV.—REPORT FROM MR. O'BRIEN.

District comprising the County of Louth and parts of the Counties of Armagh, Cavan, Down, Dublin, Fermanagh, Meath, Monaghan, and Tyrone.

Dublin, 8th January, 1870.

Gentlemen,—I have had the honour to receive your letter of the 17th ultimo, transmitting certain queries relating to the wages and condition of the agricultural labourers in Ireland, answers to which are desired for the information of Her Majesty's Government. And, in pursuance of your instructions, I now beg to submit to you my report upon this subject, as regards the district at present under my charge.

1st Query—"What has been the increase in the wages of the agricultural labourer, generally, in Ireland, during the past twenty years?"

Dividing the agricultural labourers into the two classes of "intern and extern"—that is, those who reside in the families of their employers, getting board, lodging, and washing, &c., in addition to their wages; and those who do not so reside, and are paid either wholly in money, or partly in money and partly in diet—it may, I think, be laid down as a general rule, that the wages of the former have doubled during the past twenty years, while their diet and general treatment have also undergone a considerable improvement during the same period. As regards the second class, the returns and information I have obtained from different localities do not quite correspond, the alleged increase ranging from 20 per cent., in some places, to as high as 100 per cent. in others; 50 per cent. may, however, be taken as about the closest approximation it is possible to make to a general average.

2nd Query—"What is about the present rate of wages of an agricultural labourer if employed—(*a*) by the week or longer period—(*b*) by the day only?"

As regards the class of farm servants already indicated by me under the term "intern," the general rate of money wages now paid to them ranges from about £8 to £12 a year—the general average being about £10; and as regards the other, or non-resident class, the rate of payment varies a good deal, as I have stated, with the locality. As a rule their wages now range, when employed by the week or longer period, from 6*s.* to as high as 9*s.* and 10*s.* per week—and, when employed by the day only, from about 10*d.* or, more commonly, 1*s.* to 1*s.* 3*d.* in the winter season, and during the rest of the year from about 1*s.* 2*d.* to 1*s.* 6*d.*, 1*s.* 8*d.* and 2*s.* per day, rising very frequently in the harvest time to 2*s.* 6*d.*, 3*s.*, and even 3*s.* 6*d.* per day, without food. When diet is given to the labourer—and in some localities it is difficult to obtain them on any other condition—the money payment, in addition to food, ranges from 8*d.* to 10*d.* and 1*s.* per day. In the case of skilled labourers—such as ploughmen—it is not unusual, in some localities to grant, in addition to the scale of wages here given, also a free house—sometimes with a garden, and more frequently with turbary, firewood, or an allowance of coals—say two tons per annum.

3rd. Query—"Are the agricultural labourers, as a class, contented?"

The answers I have received to my inquiries upon this head vary a good deal, as might be expected, with the different localities, but the great preponderance of the testimony furnished to me, is in the negative—the least favourable replies as to this coming from such districts as the County Meath, where grazing farms predominate, and employment is consequently least continuous—and the most favourable from Louth and Ulster, where either extensive tillage farming, or this in combination with manufacturing industry, prevails.

As a rule I am sorry to come to the conclusion that discontent unquestionably appears to be the prevailing sentiment amongst the class in question, at the present time, and, this being so, it becomes desirable that I should offer for your consideration some observations as to what occurs to me to be the most reasonable explanation of the actual state of things.

As regards the class of labourers already described as resident in the houses of their employers, it is quite clear that not only are their wages as high as the value of agricultural produce will admit of their being paid by farmers, but that, as they are found in almost everything, except wearing apparel, they are, also, amply sufficient to satisfy every reasonable want of persons in their sphere of life; yet it is stated, and is probably true, that amongst this particular class, the feeling of discontent already adverted to exists more widely than amongst any other—the explanation of which would appear to me to be that the members of it having neither any permanent tenure of their situations, nor any local or domestic ties or associations to bind them closely to any particular persons or places, as a rule look forward to America, as their ultimate

destination; and, while accumulating the limited capital necessary to enable them to attain this end, the prevailing feeling amongst them naturally enough becomes one of restlessness and of indifference about, if not positive dislike to, what they regard as only a temporary position here.

Amongst the other class of labourers, viz.—those living with their own families, a similar feeling of discontent, though having its origin in totally different causes, also prevails.

By this class, as a rule, no hope of ultimate emigration, or change of destination is, or can reasonably be entertained, and their dissatisfaction—which is not the less strong though it may not be always openly given expression to—is, as it appears to me, traceable to very obvious and intelligible causes.

It is quite true, as has been shown, that a very large increase has taken place within the last twenty years in the rate of wages paid to this class of labourers; but it is not, perhaps, always sufficiently remembered that, concurrently with this increase in wages, there has also been a very serious advance in the cost of most of the prime necessaries of life.

In illustration of this, I may be here permitted to refer to the relative cost of maintenance and clothing in the Irish workhouses during the two years ending 29th September, 1849 and 1869, respectively—and the particulars of which, as extracted from the records of your office, I take leave to submit, viz.:—

AVERAGE WEEKLY COST PER HEAD.

Year ended	Provisions and Necessaries.		Clothing.	Total.	
	s.	*d.*	*d.*	*s.*	*d.*
29th Sept., 1849, . .	1	3¼	3	1	6¼
29th Sept., 1869, . .	2	7¼	6	3	1¼

From this you will observe that the present cost of provisions and necessaries is a little more than double what it was twenty years ago, while the charge made for the wear and tear of clothing is now *exactly* twice what it then was.

To some extent, no doubt, this large increase is referable to special causes, not connected with the cost of the several articles of consumption—as, for example, the large reduction in the numbers relieved—the change in the relative proportion of sick and healthy inmates at the two periods—and certain improvements very generally adopted in the interval in the dietary of the workhouses.

But that these causes operate to account for only a part—and that by no means the greater part—of the increase in cost that has taken place will be seen at once by reference to the following statement, showing the contract prices paid for the principal articles of food, clothing, and bedding in use in the workhouse during the two periods referred to in one of the Unions in my district—which

may, probably, be taken, for all practical purposes, as representing, with sufficient accuracy, the average state of things existing throughout the country generally, viz. :—

KELLS UNION.

RETURN of the CONTRACT PRICES of the PRINCIPAL ARTICLES of WORKHOUSE CONSUMPTION for the Half-year ended 25th March, 1850, and for the Half-year ending 25th March, 1870.

Names of Articles.	Prices on 25th March, 1850.			Prices to 25th March, 1870.			Observations.
	£	s.	d.	£	s.	d.	
White Bread, . per 4 lbs.,	0	0	4½	0	0	6½*	* The Bread is now made in the Workhouse.
Brown Bread, . ,,	0	0	3½	0	0	5¾*	
Oatmeal, . . per ton,	10	0	0	15	10	0	
Indian Meal, . ,,	7	10	0	8	7	6	
Rice, . . ,,	12	14	6	15	0	0	
Sweet Milk, . per gal.,	0	0	5½	0	0	9	
Buttermilk, . ,,	0	0	2½	0	0	2½	
Beef, . . per lb.,	0	0	4	0	0	7	
Black Tea, . ,,	0	3	6	0	2	10	
Soft Sugar, . ,,	0	0	5	0	0	4½	
Whisky, . . per gal.,	0	7	0	0	17	4	
Soap, . . per cwt.,	1	2	0	1	3	6	
Candles, . . per lb.,	0	0	6½	0	0	7	
Coal, . . per ton,	0	19	0	1	0	0	
Blankets, . . per lb.,	0	1	6	0	1	9	
Rugs, . . each,	0	1	6	0	2	6	
Gray Calico, . per yard,	0	0	4	0	0	6	
Flannel, . . ,,	0	0	10¾	0	1	0	
Check, . . ,,	0	0	6	0	0	9½	
Frieze, . . ,,	0	2	2	0	3	9	
Corduroy, . . ,,	0	1	0	0	1	10	
Butt Leather, . per lb.,	0	0	9½	0	1	3	
Kip Leather, . ,,	0	1	4½	0	2	2	
Oat Straw, . per cwt.,	0	0	7	0	3	0	

6th January, 1870. NATH. LACY, *Clerk of Union.*

From this return you will observe that, with the exception of tea and sugar, there is no single instance of any article in use having fallen in price within the last twenty years, while, on the contrary, in the great majority of the cases a very large and striking advance is shown to have taken place—an advance which, it is needless to add, has gone far to neutralize, if it has not almost entirely counterbalanced the increase in the rate of wages of the agricultural labourers already described.

The next cause of discontent in the case of the class now under consideration is to be found in the general condition of their house accommodation.

It is quite certain that, since the famine epoch, the owners and agents of property in this country have, as a general rule, stren-

uously opposed themselves to the continuance or erection upon their estates of cottier houses of any kind.

As to this no controversy can, I take it, arise, and it appears to me that the operation of this has been twofold in spreading feelings of discontent amongst the classes whose condition has been affected by it.

In the first place the mere sense that they exist subject to this species of ban, on the part of landlords and their agents, has, not unnaturally as it appears to me, given birth in the minds of the labourers to corresponding sentiments of antagonism and dissatisfaction towards those by whom they are thus led to regard themselves as being treated as, in some measure, a proscribed race; and, in the next, the restrictions thus imposed have in fact and practice had the effect of compelling them and their families to rest contented with such inadequate and comfortless accommodation as they can obtain either in the overcrowded cabins of other cottiers, or in the garrets and lanes of the nearest adjoining town or village.

The replies which I have received from various districts and from the most unquestionable sources, coincide to a striking degree in describing the house and lodging accommodation of the agricultural labourers as being, in the great majority of instances, extremely wretched, in every way.

The testimony given upon this subject in one instance conveys so full, clear, and, as I believe, so just and accurate a representation of what is, I fear, far too generally the case in this respect, that I deem it well to quote it here in full, merely premising that it comes to me from a medical gentleman who has for twenty-five years past pursued the arduous calling of Dispensary Physician in an important district of one of the principal Poor Law Unions of Ulster, and who has specially commended himself to me as a reliable authority to be quoted here, from the high consideration with which, I am aware, he is regarded amongst all classes and parties, for his skill, kindness, and efficiency in the performance of his duties. He states:—

"The house accommodation of the labourers is simply *wretched*. Their houses are seldom fit to keep out rain; the floors are damp; the windows do not deserve the name—mere holes frequently stuffed with rags; they have very rarely built chimney braces; and in nine cases out of ten are filled with smoke every time a fire is put on.

"No matter how large the family, there is never more than one sleeping place, off the kitchen, in which they are just huddled together.

"Nothing can be more miserable than the habitations of the agricultural labourers, for they cannot be called houses.

"Nothing more loudly calls for a remedy.

"The houses erected for factory operatives are good, though much overcrowded, but the agricultural labourers' huts are a disgrace to the Christianity and civilization of the country.

"If the farmers have claims for an improvement in their status, the labourers have a hundred times stronger claims.

"It is only those whose daily avocations lead them to their homes, and who see them in their beds (too often a little straw on the floor), that can form a true opinion of their misery and want.

"Pray excuse my prolix answer to the last question, I only wish I had one of our legislators for one day just to show him the real state of the agricultural labourers here."

Another very efficient Medical Officer, having under his charge an extensive district in the county Dublin, writes upon the same subject, as follows, viz.:—

"Their cabins or 'house accommodation' are the most wretched in the world—being small and without ventilation or light. Some not having chimneys, and all with damp clay floors. Some let in rain, &c., &c.

"Their furniture and bed-covering are on a par with their houses. The atmosphere of these cabins, combined with the other privations they are subjected to, has made this class particularly susceptible to low fever and pulmonary consumption."

Various opinions, substantially to the same effect as the two first quoted, though not so fully expressed, have been conveyed to me from many other quarters, in different parts of my district.

As instances of the other causes assigned for the discontent attributed to the labouring class, I select the following from amongst the numerous replies addressed to me, in answer to Query, No. 3, "Are the agricultural labourers, as a class, contented?"

An experienced Medical Officer who has been for, I believe, nearly thirty years, established in an important district upon the sea-board of the county Dublin, and who possesses an intimate practical acquaintance with all classes of the population amongst which he has lived, states:—

"As a class, they are not, and never will be, as they all hope one day to go to America."

Another correspondent, well qualified by position to give an opinion on the subject, writes from the county Meath:—

"No; employment not being steady and continuous (as this is mostly a grazing district) and, as a rule, not very much interest being taken in the labouring classes."

While, from an immediately adjoining Union, comprising some of the richest parts of the same county, a highly intelligent resident landlord—the Chairman of the local Board of Guardians—and one who has taken a prominently active part in the advancement of the agricultural improvement of the country generally, replies to the same head of inquiry:

"No; those employed by the farmers are not well housed, and their wives are not industrious as a rule."

There is, I have no doubt, a good deal of truth in the concluding part of the answer just quoted.

A thrifty and industrious wife, even moderately skilled in such

small domestic economy and management as their humble lot in life will admit of, and capable in various trifling ways of contributing, by her own and her children's exertions, something, however little, in aid of the husband's earnings, might, it is certain, do much to improve the position of the agricultural labourer, as it now exists, and has been here described; but it is to be feared that, in the great majority of cases, the assistance rendered in this way falls very far short of what it might and ought to be.

This is, however, I am quite aware, a subject as to which it is much easier to point out what is wanting than to suggest any practical remedy, which if it come at all, can only be the growth of time, training, and persevering exertion.

I have the honour to be, Gentlemen,

Your most obedient servant,

W. P. O'BRIEN.

The Poor Law Commissioners.

V.—REPORT FROM DR. HILL.

District comprising parts of the Counties of Cavan, Dublin, Kildare, King's County, Longford, Meath, Queen's County, Roscommon, and Westmeath.

3, Seaview-terrace, Donnybrook,
11th January, 1870.

Gentlemen,—With reference to your letter, No. 191, M., dated the 17th ultimo, enclosing queries regarding the wages and condition of agricultural labourers in Ireland, I beg leave to state that, on receipt of your letter, I immediately placed myself in communication with the Clerks of the Unions in my district, and other persons acquainted with the subject, requesting information; and, having received their replies, I have the honour to submit to you the following report.

The Unions in my district comprise parts of the counties of Dublin, Meath, Kildare, Westmeath, King's, Queen's, Longford, Cavan and Roscommon.

In reply to the first question, viz., "What has been the increase in the wages of the agricultural labourer, generally, in Ireland during the last twenty years?" it appears, as the result of my inquiries, that in those parts of the counties of Dublin, Meath, and Cavan, included in the Dunshaughlin, Trim, and Oldcastle Unions, the general increase in the wages has been fifty per cent., while in some parts of the Trim Union it has reached seventy-five per cent.; in the Edenderry Union, lying in the King's county and counties of Kildare and Meath, the increase has been thirty per cent.; in the Tullamore Union, including parts of the King's county and county of Westmeath, it has been fifty per cent.; and in the Mountmelick Union, situated in the King's and Queen's counties, fifty per cent.; in the Mullingar Union, in the county of Westmeath, it has been fifty per cent.; in the Delvin Union, in the same county, with one townland in the county of Meath, the rate of wages has been doubled; in the Ballymahon Union, in the counties of Westmeath and Longford, the increase has been from fifty to seventy per cent.; and in the Athlone Union, in the counties of Westmeath and Roscommon, it has been fifty per cent.; in the Longford Union, in the county of Longford, the increase has been fifty per cent.; and in the Granard Union, in the counties of Longford and Cavan, it has been about twenty-five per cent.

According to the foregoing statement, the average increase in the wages of agricultural labourers in the twelve Unions in my

district, taken collectively, during the last twenty years, has been a little more than fifty per cent.

As regards the second question, viz., "What is about the present rate of wages of an agricultural labourer if employed—(*a*) by the week or longer period; (*b*) by the day only?" the rate of wages is found to vary according to circumstances, being higher in summer than in winter, and often doubled in harvest time. In the vicinity of towns also a higher scale is adopted than in merely rural localities, and in districts where the population is scattered than in those where the labourers are numerous.

The following statement, however, shows what is about the present rate of wages, without maintenance, in the Unions in my district:—

	By the Week or longer period.	By the Day only.
Dunshaughlin,	8*s.* per week,	1*s.* 6*d.* per day.
Trim,	7*s.* per week,	1*s.* 6*d.* per day.
Oldcastle,	7*s.* per week,	1*s.* 3*d.* per day.
Edenderry,	6*s.* per week—Servant-boys and ploughmen from £6 to £10 a year, with food and lodging,	1*s.* 4*d.* per day.
Tullamore,	7*s.* per week,	1*s.* 2*d.* per day.
Mountmelick,	7*s.* 6*d.* per week,	1*s.* 4*d.* per day.
Mullingar,	6*s.* per week,	1*s.* 0*d.* per day.
Delvin,	8*s.* per week—from £7 to £9 a year, with food and lodging,	1*s.* 6*d.* per day.
Ballymahon,	8*s.* per week—£10 a year, with food and lodging,	1*s.* 6*d.* per day.
Athlone,	7*s.* per week,	1*s.* 4*d.* per day.
Longford,	7*s.* per week,	1*s.* 6*d.* per day.
Granard,	6*s.* 6*d.* per week,	1*s.* 3*d.* per day.

The average rate of wages by the day is 1*s.* 4*d.* per day; and by the week, 7*s.* 1*d.* per week. Farm servants and ploughmen who reside in the houses or on the premises of farmers, receive from £6 to £10 a year, with board and lodging.

Third question,—"Are the agricultural labourers, as a class, contented?"

On this point there is not much diversity of opinion. In eight out of twelve Unions, the agricultural labourers are stated to be not contented; and this condition is, in some localities, attributed to uncertainty of employment; in others to improvident habits, to the wretched dwellings they inhabit, and to the evil influence of agitators. In two Unions—Ballymahon and Edenderry—the labourers are described as being, generally speaking, contented; in another Union—Oldcastle—it is stated that those who are permanently employed are comparatively contented, whereas those who are only casually employed are not at all so; and in the Delvin Union they are said to be, as a class, contented, but disaffected towards the English Government.

With reference to the class of agricultural labourers known as farm servants, who live in the houses of their employers, I may remark, that in the report of the Committee appointed by His

Excellency the Lord Lieutenant to inquire into the dietaries of the county and borough gaols in Ireland, 1868, it is stated that the Committee had been informed that from this class of labourers come many of the most unruly and dangerous characters in the country, and that this circumstance "is probably attributable to the fact that the farm servant is generally a young unmarried man, having little or nothing to do after his day's work is over, and consequently more apt to fall into evil courses."*

I beg to annex a tabular statement regarding the wages and condition of the agricultural labourer in my district.

I have the honour to be,

Gentlemen,

Your obedient servant,

JOHN HILL,

Inspector.

To the Poor Law Commissioners,
Dublin.

TABULAR STATEMENT regarding the WAGES and CONDITION of the AGRICULTURAL LABOURER in IRELAND.

UNIONS.	Increase in Wages during the last Twenty Years.	Wages by the Week or longer Period.	Wages by the Day.	Condition.
	Per cent.	Per week. s. d.	Per day. s. d.	
Athlone, . . .	50	7 0	1 4	Not contented.
Ballymahon, . .	50 to 70	8 0	1 6	Generally speaking contented.
Delvin, . . .	100	8 0	1 6	Contented, but disaffected.
Dunshaughlin, . .	50	8 0	1 6	Not contented.
Edenderry, . .	30	6 0	1 4	Generally speaking contented.
Granard, . .	25	6 6	1 3	Not contented.
Longford, . .	50	7 0	1 6	Not contented.
Mountmelick, .	50	7 6	1 4	Not contented.
Mullingar, . .	50	6 0	1 0	Not contented.
Oldcastle, . .	50	7 0	1 3	When employed, contented.
Trim, . . .	50 to 75	7 0	1 6	Not contented.
Tullamore, . .	50	7 0	1 2	Not contented.

* See Report, pp. 4 and 83.

VI.—REPORT FROM MR. RICHARD HAMILTON.

District comprising the County of Donegal and parts of the Counties of Cavan, Fermanagh, Londonderry, Monaghan, and Tyrone.

Strabane, January 13th, 1870.

Gentlemen,—I have the honour to inform you, in reply to your letter, No. 191 M. '69, of the 17th of December, requesting me to obtain, for the information of Her Majesty's Government, answers to certain queries regarding the wages and condition of the agricultural labourers in Ireland, that I have made particular inquiry throughout my district on the subject, and, from the information I have collected, I am enabled to state, that the agricultural labourers may now be divided into three classes.

There are—

(1.) The ordinary day-labourer, who obtains constant employment the whole year round.

(2.) The day-labourer who only obtains casual and uncertain employment.

(3.) The indoor farm-servant.

The first class usually live on the lands of their employers and are generally married men.

The second class generally congregate in villages and in the neighbourhood of small country towns.

The third class, indoor farm-servants, are almost invariably young unmarried men, living in the same houses with their masters, who provide them with food and lodgings, and they are the only class of labourer generally employed by small farmers.

In the counties Donegal and Fermanagh the most general rate of daily wages given to the labourers twenty years ago, seems to have been 8*d.* in winter and 10*d.* in summer. In Londonderry and Tyrone the rate was a little higher, being 10*d.* in winter and 1*s.* in summer.

Where labourers received food from the farmers, the pay was less, and ranged from 4*d.* to 6*d.* per day.

The unmarried farm servants who resided with their employers, usually got, besides their food, £5 or £6 a year as their wages.

At the present time the rate of wages for men in constant employment varies from 1*s.* to 1*s.* 6*d.* a day the whole year round,

The wages of casual labourers, whose employment is uncertain, vary from 1*s.* 3*d.* to 2*s.* 6*d.* a day.

The wages of indoor farm men-servants are now from £10 to £15 a year.

You will see from the foregoing that the wages of men-servants who live with their employers, have doubled in the last twenty years, and the wages of the others are nearly one-half higher.

Twenty years ago the condition of the labourers was wretched, in consequence of the deficiency of employment, but since then it has been greatly improved. There is now ample employment with good wages for all who are willing to work.

The diet of the peasantry is much improved in the last twenty years. More tea, bread, and animal food are consumed than formerly.

So far as I can learn, I believe the labouring class are, generally speaking, contented.

I have the honour to be,

Gentlemen,

Your obedient servant,

R. HAMILTON.

The Poor Law Commissioners,
Dublin.

VII.—REPORT FROM MR. BOURKE.

District comprising parts of the Counties of Clare, Galway, Kerry, King's County, Limerick, and Queen's County.

Lisnagry, Limerick,
14th January, 1870.

Gentlemen,—I have the honour to acknowledge the receipt of your letter of the 7th ult., containing three queries with respect to the wages and condition of agricultural labourers in Ireland, and requesting me to furnish you with a report upon the subject.

In compliance with this request, I now beg leave to submit the following replies and observations, which are the result not only of my own personal knowledge, but of inquiries expressly made in various parts of the counties of Limerick, Clare, and Tipperary, through which my district extends.

First Query.—"What has been the increase in the wages of the agricultural labourer in Ireland, generally, within the last twenty years?"

Reply.—Assuming the rate in 1849—that is, twenty years ago—to have been (as I believe it was) 5*s.* a week, the increase has been from 40 to 60 per cent., according to local circumstances.

In many parts of the counties of Limerick and Tipperary the rate is now 1*s.* 4*d.* per day, or 1*s.* 3*d.* and a house. In other parts of Limerick, and in portions of Clare it is 1*s.* 2*d.* per day, with a house where available. The rates necessarily vary with the circumstances of the district. In some places where tillage farming prevails and the population is sparse, wages are high. But where the population is greater they are more moderate. While on the other hand, in large grazing districts, however scanty the population, the wages of the labourer range low, as there is less need of his services. I think, upon the whole, the points I have stated, viz., from 7*s.* to 8*s.* a week, may be assumed as the limits of variation.

Second Query.—"What is about the present rate of wages of an agricultural labourer if employed—

"(*a*) By the week or longer period?

"(*b*) By the day only?"

Reply.—Labourers engaged for an indefinite term, and paid by the week, get the wages specified in the preceding reply. Many farmers, however, have informed me that they find it necessary to pay as much as 9*s.* a week, or 8*s.* with a house—a fact which I attribute to the work required being exceptionally severe, or the payments

being made at longer intervals than once a week, and perhaps without much regularity.

When labourers are hired by the day, at ordinary seasons of the year, their wages range between 1*s.* 6*d.* and 2*s.* a day—the maximum being obtained, as already explained, where local circumstances augment the demand. But during the time of turf-cutting (May and June) or in harvest-time, the rates rise to 2*s.* 6*d.* or 3*s.* per day with a mid-day meal, and 3*s.* 6*d.* without it.

Third Query.—Are the agricultural labourers as a class contented.

Reply.—I should say *not*—judging from their carelessness about the interest of their employers. There is little community of feeling between the labourer and the farmer. A struggle appears to be always maintained between them as regards wages, and whilst the farmer sacrifices nothing to the comfort of his workman, the latter gives no more of his labour than he can help to his employer, and has little regard for his property or his interests.

In the case of labourers employed by the gentry or higher classes, this hostility is not so apparent—the service of the workman is lighter, and his relation to his employer more cordial. Moreover he finds in his master and his master's family surer friends when sickness or misfortune overtakes him.

But in too many cases the Irish labourer is still badly and expensively lodged. On properties where cottages have been built his condition is more satisfactory, but, generally speaking, he occupies a miserable cabin for which he pays a shilling a week to the farmer on whose land it happens to be. When repairs are wanted he must execute them himself, receiving an allowance only in rare instances.

In his present condition, I do not see how the labourer can be expected to feel contented. Though living with the strictest frugality, his own wages are barely sufficient to provide food for an ordinary family and pay his rent, and he depends upon other sources for the means of clothing himself, his wife, and children. But, though this picture is dark enough, it is vastly superior to anything that could have been said twenty years back. Then the labourer had not sufficient food,—now, though his diet is plain, it is substantial enough to maintain his physical strength; then he was in rags, and often without shoes or stockings,—now his clothes afford him at least sufficient protection from the weather; his children were then nearly naked,—now they are, in general, fairly clad, and he has means at command to vary his diet and procure occasional indulgences. His condition is actually better; but much is still required before it can be pronounced comfortable, or he be expected to be content.

I have the honour to be,

Gentlemen,

Your obedient servant,

RICHARD BOURKE.

The Poor Law Commissioners.

VIII.—REPORT FROM MR. HORSLEY.

District comprising parts of the Counties of Cork, Kerry, and Limerick.

Killarney, January 14th, 1870.

Gentlemen,—In compliance with the instructions contained in your letter of the 17th ultimo, I have the honour to transmit herewith the following Report regarding the present wages and general condition of agricultural labourers within the limits of my district,

And remain,

Your very obedient servant,

SAMUEL HORSLEY,

Poor Law Inspector.

To the Poor Law Commissioners,
Poor Law Office, Dublin.

Mr. Horsley's Report upon the Wages and Condition, &c., of Agricultural Labourers within his District.

I. Within the last twenty years the wages of agricultural labourers have been fully doubled throughout my district generally; but in some few localities this increase has not perhaps exceeded 75 per cent. These localities are on the seaboard of the unions of Skibbereen, Skull, Bantry, and Castletown.

The greater proportion of this large increase in the remuneration of agricultural labourers has accrued within the last five years of the above-mentioned period, and there is a likelihood of a still further enhancement of the labourers' improved condition in this direction, as the drain by emigration from this country of able bodied labour still continues, and is gradually disposing of any superabundant supply—and in some localities is producing a scarcity—of that most indispensable ingredient in farming operations.

In fact, the employers and the employed have, to a certain extent, exchanged places—the latter class being now in a position

to dictate the terms upon which they will dispose of their capital, viz., their labour, to the former.

This rise in the rate of agricultural wages is, generally speaking, loudly but most unfairly complained of by the majority of employers, who formerly were accustomed to obtain labour so cheap as to prevent the employed earning more than was sufficient for a bare existence; and even now, looking to the prices of all the necessaries of life, they are not able to provide more than the ordinary decencies and comforts suitable to their social status.

II (*a*). At present, labourers when hired by the week or for a longer period, generally receive from 8*s.* to 10*s.* per week, without diet.

Male farm-servants, hired by the year, receive from £12 to £14 in money, together with board and lodging in the houses of their employers. This class of labourers, however, often take service by the quarter, refusing to engage for a longer period, and in this case the rate of wages demanded and received by them is proportionately in the same scale as if the engagement were for a year.

II (*b*). Labourers employed by the day only, at ordinary seasons of the year, usually receive from 1*s.* 4*d.* to 1*s.* 6*d.* without diet; but at seed time and harvest time the daily rate of wages of common labourers—which does not include scythe-men—ranges from 1*s.* 6*d.* to 2*s.*, together with two full meals for themselves per day.

I think it right to mention here that much field labour in my district is performed by women and grown-up girls, and by boys from 13 to 15 years of age, and that the daily wages of these classes have also been doubled within the last twenty years, all of them earning, when employed, from 8*d.* to 10*d.* per day, instead of, as formerly, from 4*d.* to 5*d.* only.

III. From all the information afforded to me by persons well fitted to give a sound opinion upon the subject, and from my own acquaintance with it, I think the agricultural labourers in my district are, as a class, fairly contented at present, especially as they entertain the expectation that their condition will soon be materially improved by a further rise in the rate of their wages, and are also under the impression that there is a disposition on the part of proprietors to take some steps towards their obtaining a better description of dwellings or cottages than they possess at present.

The nearest approach to discontentment on the part of this class arises from the distrust which they almost universally entertain as to their employers having any inclination to advance, at their own cost, their interests in any way that they can possibly avoid.

SAMUEL HORSLEY,
Poor Law Inspector.

January 14th, 1869.

IX.—REPORT FROM MR. WM. J. HAMILTON.

District comprising the County of Waterford, and parts of the Counties of Carlow, Cork, Kilkenny, Limerick, Tipperary, and Wexford.

Fiddown, Piltown,
14th January, 1870.

Gentlemen,—In compliance with the instructions in your letter of the 17th ult., No. 191, M. '69, I beg to report to you regarding the wages and condition of agricultural labourers in this district.

I have made inquiries in every portion of my district. I have been in communication with land proprietors, land agents, landholders, Poor Rate Collectors, Relieving Officers, Masters of Workhouses, besides other miscellaneous sources open to me; and I have communicated with every Dispensary Medical Officer in my district. The latter gentlemen, from their frequent visits to the residences of the agricultural classes, have peculiar facilities for knowing their condition in almost every respect.

The general tenor of the replies is as follows:—

1. "What has been the increase in the wages of the agricultural labourer, generally, in Ireland during the last twenty years?"

There has been an average increase in the rate of wages of the agricultural labourers throughout the district during the last twenty years of nearly 80 per cent. This increase has varied in different Unions, and in different portions of Unions.

2. "What is about the present rate of wages of an agricultural labourer, if employed—

"(*a*) By the week or longer period?

"(*b*) By the day only?"

The present rate of wages of an agricultural labourer, if employed, averages—

	£	s.	d.
By the year, with diet, ...	10	6	0
By the week, with diet, . . .	0	5	0
By the week, without diet, . . .	0	7	6
By the day only, without diet, . .	0	1	5

These rates likewise vary in different Unions, and in different portions of Unions; the highest rates being—

	£	s.	d.	Union.
By the year, with diet, .	12	0	0	Kilmacthomas.
By the week, with diet, .	0	6	0	Callan.
By the week, without diet, .	0	9	0	Clogheen.
By the day, without diet, .	0	1	7	Dungarvan.

The lowest are—

By the year, with diet, .	8	0	0	Urlingford.
By the week, with diet, .	0	4	0	Clonmel. Kilkenny.
By the week, without diet, .	0	7	0	Thurles.
By the day, without diet, .	0	1	4	Cashel. New Ross. Thurles. Waterford. Wexford.

The yearly hiring applies solely to single men, who live in the farmers' houses. This class is well off.

Weekly hiring applies chiefly to cottiers on the land, who hold a cabin from the landlord or farmer; in some instances these are well off comparatively, especially where the landlord gives a plot of ground; but this is not the general practice.

During the harvest, casual labourers are generally employed by the week, and get their diet and lodging.

Daily hiring applies chiefly to men who reside in the towns or villages, and who have to go into the country for work; the rate of wages given is the average during employment. The daily labourers frequently have not employment for more than nine months in the year, and are subject to broken days and to all kinds of interruptions.

When the weather is most severe they often get the least employment: they sometimes have long distances to go to and from work, often get wet, and suffer much hardship, not unfrequently ending in sickness, disease, and want

Though, as a rule, the labouring classes are much better paid, more continuously employed, better dressed, and better fed than formerly, the condition of some of them, especially in the towns and villages, is still more precarious and struggling than it ought to be, and this unsatisfactory state exists while there is an increasing want of labour in many of the rural divisions.

3. "Are the agricultural labourers, as a class, contented?"

On the whole, the labouring classes are represented as not being contented; various grounds are assigned, the most common being—the difficulty of supporting themselves and their families, irregular employment, and want of suitable house accommodation; there appears to be a general desire to emigrate—many of these classes have emigrated, and many will do so as soon as they can.

There is still a surplus of labour in the towns and villages, and either a scarcity or a threatened scarcity in some of the country divisions.

Twenty years ago, in this part of Ireland, the general average weekly cost of maintenance per head in the workhouses, exclusive of clothing, was about 1*s.* for each healthy inmate. It is true that it is now more than double that amount; but the increased cost is attributable in a greater or lesser degree to improved scales of dietary, and more liberality generally on the part of Boards of Guardians, as regards the quality of supplies, &c. The contract prices of the chief articles of dietary and necessaries were as follows:—

		1849.			1869.		
		£	*s.*	*d.*	£	*s.*	*d.*
Bread,	per 4 lbs.,	0	0	4¼*	0	0	5½
Meat,	„	0	0	2	0	0	5
Milk,	per gallon,	0	0	5	0	0	8½
Sour Milk,	„	0	0	5	0	0	5
Indian Meal,	280 lbs.,	0	18	0	0	18	3
Oatmeal,	per cwt.,	0	9	6	0	15	0
Potatoes,	per stone,	0	0	5	0	0	6
Tea,	per lb.,	0	4	0	0	2	2
Sugar, Brown,	„	0	0	4½	0	0	4½
Coals,	per ton,	0	14	6	0	15	0
Rice,	„	12	0	0	14	0	0
Soap,	per cwt.,	1	2	0	1	3	6
Candles,	per lb.,	0	0	5½	0	0	5½
Pepper,	per lb.,	0	0	10½	0	0	5

Therefore, in comparing the general condition of the agricultural labourer and his dependents at the two periods, I do not think that the present prices of food and other necessaries, as compared with the present rate of wages, can be properly urged as a ground for discontent with his present position. Wages have steadily increased; whereas food has fluctuated, and the labouring classes have gone through harder times than the present, and with greater disproportion between the increased prices of food and the increase in wages, with less general discontent than I apprehend now prevails.

I think that want of regular employment is one cause of discontent. I cannot imagine any more trying position in life than that of a father, able and willing to work for his dependents, and who cannot obtain it regularly. In this respect I think the industrious poor have suffered perhaps more than any other class by the state in which the country has been kept of late years. Capital has been scared away; and it is now a work of difficulty, if not of impossibility, to obtain funds for works of magnitude; such works

* This was the market price. The 4-lb. loaf then used in Waterford Workhouse was composed of ryemeal, wholemeal, 2nd and 3rd flour, and cost 3½*d.* per 4lb. This description of bread is not now used in any workhouse. Ryemeal was then £7 15*s.* per ton; it is not now used in any workhouse in this district.

may be said to be at a stand-still everywhere in this part of Ireland; and even old-established companies can only obtain loans at a rate of interest that cripples them, and interferes with the development of railway traffic, &c., and the general interests of the country.

However, the labouring classes have been so reduced in numbers that if they were properly housed and located in the country, as I think they ought to be, I do not believe that even with the limited demand for labour there would now be any surplus hands, at any season of the year, in any part of the country that I know anything of.

Want of house accommodation in the vicinity of their work, is, I think, one of the chief and most just grounds of complaint. In a report which I addressed to you in April, 1869, I endeavoured to account for the statements and complaints which are sometimes made during the busy seasons of the year, as to the alleged number of men and women supported in the workhouses "in idleness," whereas the class of farmers in the rural divisions whose farms are of larger extent than they and their families with the aid of one or two permanent agricultural servants are able to cultivate, find difficulty in procuring the number of extra hands they require. I said that "the large number of small farms had hitherto prevented any very serious inconvenience to employers from the want of labourers in the rural electoral divisions, but it is a want which, I think, will, notwithstanding the introduction of machinery and the utmost economy of labour, be felt more and more when the available supply from the towns ceases to be as great as it now is." I added that as it then was, so far as employers were concerned, "they had simply to pay higher wages than the ordinary market rate," and I might have added that they got less value.

I said that the case was far more serious, regarded as a labourers' question. I expressed my belief that the increasing want of good farm-servants is to be attributed to other causes than those assigned, and added, "Labour has not found its level under the existing system of rating; it has been forced up here and down there, and there is, practically, so far as the labourer is concerned, less freedom than if there were a law of settlement." The effect has been that there is a law of "no settlement." "The towns have had to receive from year to year what was deemed to be the surplus labour of the rural divisions. Labourers and their families have been driven for shelter to the low lodging-houses of the towns, causing injury in many ways, tending to overcrowding, immorality, drunkenness, desertion, poverty, disease,—all heavy sources of pauperism and expense."

I expressed my belief that a system of union rating would have prevented much of what is now complained of; "labourers would have been housed and valued where they are now needed. Every source from which pauperism is known to spring would have been more easily kept in check; the interests of all classes in the union would have been identical."

I said "that judging by the care which is manifested as to

charges which are in common, I should feel no apprehension of any remissness if all charges were made so, in such an area as any union I have knowledge of; that any increase of rates to the occupiers of land would be more than compensated by facilities for obtaining labour at any time and at the ordinary market rate, and generally there would be reduced expenditure for crime, poverty, and disease." "I said nothing of the saving of time to members of Boards of Guardians in the discussion of the endless questions and disputes as to chargeability, the more liberal and the broader views which would take the place of selfish views, the facilitating and simplifying of accounts, which few Guardians or ratepayers can understand, &c., &c., because all these considerations sink into insignificance, in my opinion, when compared with the evils which have resulted to the labourers in particular, to the occupiers of land, and to the public generally, from clearing the rural divisions of labourers, which, I believe, has been the practical effect of small areas of taxation."

I said that these were some of the reasons which made me think it was unjust to attribute to defects in workhouse management, evils which the workhouses, had, in point of fact, really mitigated, and only contributed to, to an almost inappreciable extent; and I would now beg to add, that I think these are some of the reasons why so large a portion of the agricultural class is not contented, and why so many are desirous to emigrate at a time when their services are really needed, and when farmers are beginning to complain that labourers dictate their own terms.

Every day's experience confirms me in the opinion I have often expressed, that no able-bodied agricultural labourer, who has a home that he can call his own, would enter a workhouse if he could avoid it, or remain a day longer in it than he could possibly help. With a house over his head, however humble, that he can feel safe in as regards its tenure, and a small plot of ground such as is given by some land proprietors, an Irish labourer who meets with ordinary fair treatment is not undeserving of confidence, and is generally as useful a member of society as is possible, considering the many evil influences he is exposed to—so much poison with scarcely any antidote, not the least portions of which, I think, are the licentious weekly journals and bad whisky which are to be found in every town and village, and hamlet in Ireland. Where, on the other hand, the Irish labourer has the advantage of good influences, all the good points of the national character are to be found amongst the most humble class of the labourers in a marked degree.

I have the honour to be,

Gentlemen,

Your most obedient servant,

W. J. HAMILTON.

To the Poor Law Commissioners.
&c., &c., &c.

X.—REPORT FROM DR. BRODIE.

District comprising parts of the Counties of Cavan, Clare, Galway, King's County, Leitrim, Mayo, Roscommon, Sligo, and Tipperary.

Galway, 14 January, 1870.

Gentlemen,—I have the honour to acknowledge the receipt of your letter, dated 17th ult., enclosing queries regarding the wages of agricultural labourers in Ireland, and requesting that I would furnish a report on the subject.

The constant intercourse rendered necessary in the discharge of my official duties left me little to learn on this question. At the same time I have availed myself of the best sources of information to confirm or correct, if necessary, my own impressions. I beg, therefore, to report that the present rate of wages for agricultural labourers in my district, comprising the Unions—

County of Galway.—Galway, Tuam, Mountbellew, Ballinasloe, Loughrea, Portumna, Gort, and Glennamaddy;
County of Roscommon.—Roscommon, Strokestown, Castlerea, and Boyle;
County of Leitrim.—Carrick-on-Shannon and Mohill;
County of Cavan.—Bawnboy;
King's County.—Parsonstown;

is about double what it was 20 years ago.

Formerly 6*d.*, or at most 8*d.*, was the usual rate. Now, a good labourer in regular employment, earns about 1*s.* a day.

The labourer who is not engaged to a constant employer may get from 1*s.* 6*d.* to 2*s.* a day during the pressure of Spring and harvest work, and very often get diet in addition; but his average earning will not exceed 1*s.* a day.

The labourers as a class are not contented. Previous to the famine the labourer enjoyed his cabin, attached to some farm, with a rood, or half acre, or acre of land, and facilities for obtaining con-acre land to sow a crop of potatoes. He was able to rear his pig and keep fowl. The farmer's wife was usually kind and charitable, and by donations of skimmed or butter milk, and in other ways, helped the support of his family.

His cabin, no doubt, was squalid and unsightly, but he was more cheerful and contented than the labourer of to-day who has nothing but his day's wages. When potatoes grew and turf dried,

his immediate wants were supplied, and an elasticity of spirits, a complacent resignation under all kinds of trouble, which are becoming things of the past, filled up the place of material comforts.

The social changes and custom of the last twenty years render it most difficult for a labourer to get an allotment of land. Landlords' views are generally opposed to it; and let it be viewed as it may, the fact remains, that you cannot convince an Irishman that he is better off as a daily labourer, even with fair wages, than he would be with the possession of a bit of land.

With the young of both sexes, the best labourers and farm-servants, there is a prevailing desire to emigrate, which they carry out as soon as they have enough saved to pay the expense. The offer of good employment is not sufficient to induce them to stay at home, when it is in their power to carry this intention into effect. Nothing but the possession of a "bit of land"—two or three acres—could divert them from it.

The labour supply of resident landowners is now chiefly drawn from their small tenants, who are obliged to attend when required to do the landlords' work at rates of wages, in many instances, considerably under the current rates paid to ordinary labourers, and without regard to the inconvenience or loss to the tenant by being obliged to neglect his own business at critical periods of sowing or reaping.

I have the honour to remain,

Gentlemen,

Your obedient servant,

T. BRODIE,
P. L. Inspector.

To the Poor Law Commissioners,
Custom House, Dublin.

XI.—REPORT FROM DR. ROUGHAN.

District comprising parts of the Counties of Galway, Mayo, Leitrim, Roscommon, and Sligo.

Galway, January 15th, 1870.

Gentlemen,—I beg to acknowledge the receipt of your letter of the 17th ultimo, No. 191, M. '69, informing me that you had been requested to obtain, for the information of Her Majesty's Government, answers to certain queries regarding the wages and condition of agricultural labourers in Ireland, through the Inspectors, and directing me to report on the subject. I now have the honour to submit the following report, so far as relates to the district of unions under my charge, namely, Clifden and Oughterard, in the county of Galway; Ballina, Ballinrobe, Belmullet, Castlebar, Claremorris, Killala, Newport, Swineford, Westport, in the county of Mayo; Sligo, Tobercurry, and Dromore West, in the county of Sligo; and Manorhamilton, in the county of Leitrim.

In reply to the first query, I have to state that the wages of agricultural labourers has doubled since the year 1849.

To the second query—that the present rate of wages for labourers by the week is 5*s.* during the months of November, December, January, and February. In the hurried times of the Spring and harvest months the rate of wages is increased to 12*s.*, and in some instances 14*s.*, per week. Labourers, who are engaged by the quarter or by the year, and who are called farm-servants, receive from £8 to £10 a year, together with maintenance and lodging.

In answer to the second part of the second question, I have to state that the daily rate of wages of labourers during the months of November, December, January, and the early part of February, is from 10*d.* to 1*s.*, in the spring and autumnal months from 2*s.* to 2*s.* 6*d.*, and in portions of the county Sligo 3*s.*; mowers receive from 2*s.* 6*d.* to 3*s.* 6*d.* a day, with diet.

Third Query.—I find much difficulty in giving a definite reply to this question. The contentment of the labouring classes varies in different localities. When kept in constant employment I think they are generally contented; but I regret to say the great bulk of this class are not kept in that state of constant employment which would insure their contentment. From the digging out of

the main crop of potatoes in October until the early spring following I may say there is no employment for them. Another source of their discontentment is the want of suitable habitations for themselves and their families; and I have heard from those well qualified to give an opinion on this question, that the want of even a small portion of land—say a garden for potatoes—is much felt, and renders them dissatisfied with their present position. I had almost omitted to state what appears to me to be another cause of discontentment: they find when they go to England, the rate of wages is there high, while, in comparison, they are low at home.

I have the honour to remain,

Gentlemen,

Your obedient servant,

GEO. F. ROUGHAN, P.L.I.

PALL MALL

REPORTS

FROM

POOR LAW INSPECTORS IN IRELAND

AS TO THE

EXISTING RELATIONS

BETWEEN

LANDLORD AND TENANT

IN RESPECT OF

IMPROVEMENTS ON FARMS, DRAINAGE, RECLAMATION OF LAND, FENCING, PLANTING, &c.;

ALSO

AS TO THE EXISTENCE (AND TO WHAT EXTENT) OF THE ULSTER TENANT-RIGHT IN THEIR RESPECTIVE DISTRICTS,
&c., &c., &c.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1870.

[C.—31.] *Price* 10*d.*

LETTER from the CHIEF SECRETARY of HIS EXCELLENCY the LORD LIEUTENANT to the POOR LAW COMMISSIONERS.

DUBLIN CASTLE,

30*th November*, 1869.

GENTLEMEN—With reference to previous correspondence on the subject of the desire of Her Majesty's Government to obtain information relative to the position of Occupiers of Land in Ireland I am directed by the Lord Lieutenant to state that His Excellency wishes to make inquiry generally throughout Ireland, in a summary way, as to the ordinary existing relations between Landlord and Tenant in respect of the subject of *Improvements* on *Farms*, such as—*Buildings;* the Erection and extensive Repair thereof; Drainage; Reclamation of Land; Fencing; Planting, &c.

His Excellency considers that it may be possible to obtain this information, in a brief space of time, through the agency of the Poor Law Inspectors, who, in the course of their frequent tours of inspection, embracing the whole of Ireland, are, in all probability, already conversant with the subject.

I am therefore to desire that you will communicate this letter to the Poor Law Inspectors, and request them to report, for His Excellency's information, with as little delay as possible, and in the following manner, viz. :—

The Inspector is requested to report, in a general manner, what is the practice within his district as to making Improvements on Farms, such as—

1. *Buildings* of Farm Houses and Offices, and extensive Repairs of these, such as roofing, &c.
2. Drainage.
3. Reclamation of Land.
4. Fencing, Iron Gates, &c.
5. Planting.

Whether any of these, and if so, which, are executed at the cost of the Landlord, or whether they are done by the Tenant at his own cost; and, in the latter case, whether the Tenant has, by custom or practice, any security for the value of his improvements—

First—By guarantee or understanding that he will receive a fair proportion in the event of eviction or surrender; or

Second—By guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period.

The Report is to specify what parts of the District any such custom obtains, or on what part improvements are effected by the Landlord; Also,

Whether in either case the Annual Rent is usually increased;

Whether there are many instances of Tenants losing altogether the value of improvements effected at their own expense, through eviction or disproportionate increase of rent.

It will be desirable, when possible, to afford any further information which may occur to the Inspector as being valuable; such as, whether improvements are on the increase or declining, and also whether notices to quit are of frequent occurrence; and, if so, are they generally followed up.

The main object in view is to ascertain to what extent the dwelling-houses, offices, fences, roads, reclamations, works of drainage, plantations, &c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and in fact constituting those farms, as distinguished from waste land, have been created by the present or former Tenants, or by the present or former Landlords respectively.

Any statement approaching to accuracy, which the Inspector may be able to make with regard to any particular Union, or other portion of country which may be fairly taken as a sample of a wider district, will be valuable for the present purpose

It would further be desirable for the Inspector to report—

I. Whether the Ulster Tenant-Right custom is in existence in his district; that is to say, whether any payment is made to the outgoing Tenant, with or without the consent of his Landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the Tenant, or by preceding Tenants.

II. If such a custom exists (i.) whether it is confined to Tenants holding at will, or extends to leaseholding Tenants; (ii.) whether it can be defined and a value set upon it at so many years' rental, or at so much per acre; (iii.) whether the custom, if it exists, is spreading and gaining ground in his district so far as his experience goes.

III. Has it come within his experience that dowers, portions for younger children, or the like, have been charged by Tenants-at-will upon their temporary occupations.

IV. Does manufacturing industry, either on a large or small scale, prevail or exist in this district, meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of whatsoever sort.

V. Does the labouring population in his district go over to England or Scotland for harvest or manufacturing work; and if so, to what extent.

I am, Gentlemen,

Your obedient Servant,

C. P. FORTESCUE.

The Poor Law Commissioners,
&c., &c., &c.
Custom House.

LETTER of INSTRUCTIONS from the COMMISSIONERS to each INSPECTOR, enclosing Copy of the foregoing Letter.

Poor Law Commission Office, Dublin,
2nd December, 1869.

SIR,—The Commissioners for Administering the Laws for Relief of the Poor in Ireland transmit to you herewith a copy of a letter which they have received from the Chief Secretary of His Excellency the Lord Lieutenant, communicating the desire of His Excellency to obtain, through the Poor Law Inspectors, in a brief space of time, information on various points relative to the position of the occupiers of land in Ireland.

The Commissioners feel that it is unnecessary for them to point out the great importance of the task in question, or to request that every exertion which the brief space of time available will admit of, may be made to render the information as valuable, in point of extent and accuracy, as possible.

Copies of the returns of agricultural holdings which have been called for will be forwarded to you, from time to time, as received from the clerks of unions in your district, as they may throw some light on the localities regarding which information may be most valuable.

The Dublin office will supply every assistance to you in the execution of this duty which you may require, and which it may be in the power of the Commissioners to afford.

By order of the Commissioners,

B. BANKS,
Chief Clerk.

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I.—REPORT FROM MR. R. HAMILTON.

DISTRICT comprising the COUNTY of DONEGAL and parts of the COUNTIES of CAVAN, FERMANAGH, LEITRIM, LONDONDERRY, MONAGHAN, and TYRONE.

Strabane, January 13th, 1870.

GENTLEMEN,—With reference to your letter, No. 30,290, '69, of the 2nd December, 1869, transmitting a copy of a letter which you received from the Chief Secretary of the Lord Lieutenant, communicating the desire of His Excellency to obtain through the Poor Law Inspectors, in a brief space of time, information on various points relative to the position of the occupiers of land in Ireland, and also in reference to further correspondence, in which you expressed a desire that I should, on or before the 15th of January, 1870, furnish you with my report on the subject above referred to,—I have the honour to lay before you the following account of my proceedings and of the information which, in the very short space of time at my command, I have been able to collect.

Immediately on receipt of your letter I put myself in communication with persons who were familiar with the management of large properties, and endeavoured in every way to obtain the particulars necessary for this report. On the 15th of December I received from your office printed forms of queries, which I circulated throughout my district to the number of about 600. I sent them to the managers of estates, landed proprietors, and other persons who, I thought, were thoroughly acquainted with the subject; and in all cases I enclosed a letter requesting them to favour me with their observations on the various points suggested. I also communicated with those union officers who, from the nature of their duties, must be thoroughly familiar with practices which prevail on the several estates within their respective districts.

I and the gentleman whom I employed as my assistant in this matter, spent the next fortnight or so in visiting the various unions and questioning the officers. I also, whenever opportunity offered, called upon, and had interviews with, as many landowners and agents as possible.

I was thus enabled, through these channels of information, to obtain in a summary way the common report regarding the ordinary existing relations between the landlord and tenants of each estate in my district, in respect to improvements on farms, &c., and also to procure the required information respecting the existence of the "Ulster tenant-right" custom, and other matters referred to in the letter of the Chief Secretary.

The gentlemen to whom I sent the queries generally replied in

a clear, frank, and satisfactory manner, and I here take this opportunity of tendering to them my sincere acknowledgments for the assistance which they gave me in this inquiry.

I have also to add that the union officers carried out, in a most efficient way, the instruction which I gave them.

The various subjects on which the Chief Secretary's letter asks for information may, I think, for the purposes of this report, be classed under the following general heads:—

Improvements.
Tenant-right.
Notices to quit.

There are two or three less important matters which will be dealt with in the body of my report, and which it is therefore needless further to refer to here.

In my district there are seventeen unions, comprising the counties of Donegal and Fermanagh, small portions of Leitrim Cavan, and Monaghan, the greater part of the county Tyrone, and a portion of the county Londonderry.

In no instance do the limits of any union coincide with the boundaries of a county, and I am of opinion that it contributes greatly to lucidity to adopt the arrangement of counties rather than of unions. I have, therefore, followed this order in my report as closely as I conveniently could. For clearness I shall speak of the various divisions as the Donegal, Derry, Tyrone, and Fermanagh districts.

Improvements. It has been pointed out in the Report of the Devon Commission, and also in Mr. Campbell's pamphlet, that in Ireland the word "improvements" is used in a different sense from that which it bears in England and Scotland, and is applied not merely to what are there termed "improvements," but also to the erection of dwelling-houses and farm-buildings, and the construction of drains, fences, &c., &c.

I propose, therefore, to state under this head what is the practice within my district as to making these "improvements;" and proceeding in the order already indicated, I shall first deal with the Donegal District.

Donegal is a maritime county, with a coast line of considerable extent, which is indented by numerous bays. It contains an area of 1,193,443 acres, of which about 393,191 are cultivable. In 1861 there was a population of 237,395, mainly employed in agricultural occupations.

To the north of the county is the peninsula of Inishowen, bounded on the east by Lough Foyle, and on the west by Lough Swilly. Much of the surface is mountainous and boggy: there is, however, a good deal of tolerably fertile soil. In the union of Inishowen there are fifty-two properties, the largest of which is under £3,500 a year, and there are only seven others over £1,000.

The dwelling-houses and farm-offices on the holdings are usually erected by the tenants at their own expense. In some instances, however, the landlord contributes slates and timber, or, if the tenants should prefer it, some landlords will lend money, for which they charge interest.

Reclamation of land is done by the tenant, and also fencing. Some landlords afford a trifling assistance, pecuniary or otherwise, in carrying on these works, but many do not. There are but few fences, except in the immediate vicinity of gentlemen's demesnes; and the farmers are obliged to employ herds to protect their crops from the depredations of cattle. There is a fair amount of reclamation of land in progress.

Where the tenant executes improvements at his own cost, he has not any security for his outlay—by guarantee or understanding—that he shall receive a fair proportion in the event of eviction or surrender; he is, however, in some cases permitted to enjoy the fruits of his industry for a long period without increase of rent, but in many others the rent is enhanced in consequence of the tenant's improvements, after a brief interval of time. On some properties improvements are increasing slowly, but steadily, on others not. However, within the last twenty years a marked alteration for the better has taken place in the appearance of the farms, and in the methods of tillage practised by the cultivators. The holdings are generally small. There is little or no planting done throughout the union, except on lands in the occupation of the proprietor.

The remaining portion of the county may, for the purposes of the present Report, be roughly divided into two parts—the eastern and western—which differ widely in natural aspect, the latter being wild and mountainous. The western—and by far the larger part—extending from Lough Swilly to Donegal, is principally a vast tract of mountain, intersected by numerous valleys, most of which are drained by small rivers.

Many of these valleys are tolerably fertile, and are thickly inhabited. All along the coast the population is dense. Most of the holdings near the sea are very small few of them exceeding £2 or £3 a year in value. Potatoes, oats, and flax are the principal crops; and spade husbandry is largely practised along the sea-coast.

Throughout this part of the county a very important improvement was effected between twenty and thirty years ago, entirely through the interposition and exertions of the landed proprietors. About that time a very large portion of the land was held by the tenants in a species of common, called in provincial phraseology, "rundale," or "running-dale"—terms which it may be needful to explain.

The practice of sub-letting the holdings then prevailed to a most injurious extent, and a very peculiar method of sub-division found favour with the peasantry. The sub-tenants would not take their portions in compact lots; each insisted on having a share of all the various qualities of land in the holding which was to be sub-divided, and the man who got a bit of good land at one extremity, was sure to have a bit of bad at the other, with bits of other quality in different places, each bounded by the neighbour's farm without any ditch or fence between, and exposed to the incursions of the neighbour's cattle, thus affording a fruitful source of quarrels, not only about the trespasses of cattle, but also about rights of way. Lord George Hill stated, in his evidence before

the Devon Commission, that one man held a farm in forty-two distinct patches, and at last gave it up in despair of finding it; and as another instance he mentioned a field of half an acre in extent which was held by no less than twenty-two persons. It may be here mentioned that a very clear illustration of this wretched system of "rundale" is given in a map by the able compiler of the "Digest of Evidence taken before the Devon Commission" (Part I., p. 422).

The houses on the lands held in rundale were in clusters, and the men did not live upon their farms. Under a tenure so barbarous the introduction of an improved system of husbandry was found utterly impracticable, and accordingly the landlords determined to abolish it. They carried out their resolve by a process which is called "squaring" the farms, *i.e.*, re-arranging them, and placing each man upon one compact holding—separate and apart from his neighbours. The clusters of cabins were thrown down, and on each of these remodelled farms a new dwelling-house was erected, the landlords, in all cases, contributing in various ways to effect this improvement—some remitting a year's rent, others giving slates, timber, or other materials for building, while the tenant always gave his labour. The result of these proceedings is, that rundale no longer exists, except in the case of some old leases, where landlords have no power to interfere, and the tenants, though at first they offered a strenuous resistance, are now unanimous in acknowledging the benefit of the change. Since that period the tenants have, on many properties, effected, at their own expense, all improvements in regard to building farm-houses and offices, though, in a few cases, the landlords have contributed assistance by giving slates and timber.

Nearly all drainage is now done by the tenants, but on a few properties the owners render a small pecuniary aid in effecting this very needful work. The reclamation of waste land is now exclusively carried on by the tenants at their own cost. A good deal of ground has been of late years brought into cultivation by the farmers in the mountain tracts, who are gradually making considerable encroachments upon the waste lands.

Very little fencing is done, and it is usually effected by the tenant at his own expense. Where fences do not exist, the farmers are forced to employ herds to protect their crops from the depredations of cattle.

There is no planting worth mentioning except a little which is done by the landlords themselves upon their own private demesnes. The tenants throughout this district have no security for the value of their improvements by guarantee or understanding that they will receive a fair proportion in the event of eviction or surrender, but, as a matter of fact, they are on many estates permitted to enjoy whatever improvements they may make for a lengthened period, without increase of rent.

The eastern part of Donegal is a rich and fertile tract of country, and presents a very different aspect from the western. The holdings are large, and the population seems to be thriving.

The Londonderry portion of the district comes under the same description as that now given of the east of Donegal.

In the Tyrone district the lands are generally light, but productive, and there are large tracts of mountain in it. The occupiers seem to be comfortable and contented.

The land in Fermanagh district is principally arable, and is famous for its grass. There are some very large estates in this county.

The description I have given of the improvements in the west of Donegal is, in a great measure, applicable to the mountain districts of Tyrone and Fermanagh.

With regard to the ordinary improvements, the following account applies in the main to the great majority of estates in the counties above mentioned. There are some exceptions, such as the estates of the London Companies in the county of Londonderry, and a few others where special arrangements are made.

Owners of property appear to be generally ready to assist their tenantry in the erection of farm-houses and offices by giving timber and slates—or in other ways; but as far as I can learn, tenants have availed themselves of offers of this kind to only a limited extent.

On most small properties and on many large ones, the tenants execute these improvements entirely at their own expense.

In all cases the tenants are expected to keep their farm-buildings in repair at their own cost.

There is a good deal of drainage done throughout these counties. Most of this is done by the tenants themselves. In some cases the landlords render a small pecuniary assistance. In others money is borrowed from the Board of Works for this purpose, the tenants paying the interest thereon.

A considerable amount of reclamation is going on; this is carried on exclusively at the risk and cost of the tenant.

In some cases the tenants are permitted to enjoy the lands they reclaim for a long period, varying from twenty to forty years. In others the landlords seem to think that from three to five years is sufficient to recoup the tenants for their outlay; and at the end of this time they raise the rent; while in others, again, a gradually increasing rent is put upon them from the first until it amounts to the full value of the reclaimed land.

Fencing and planting are done almost entirely by the tenants themselves. Iron gates are very uncommon. The tenant has no security for the value of his improvements, by guarantee or understanding, that he shall receive a fair proportion in the event of eviction or surrender; nor is any guarantee ever given that he shall be undisturbed in the enjoyment of the effects of his own improvements for a definite period. So far as I could gather from the reports and answers made to me, I could arrive at no other conclusion than that it is the usual practice to raise the annual rents in consequence of the tenants' improvements, when the landlord thinks they have been enjoyed long enough to reimburse the tenant for his outlay. This is very well illustrated by the preceding paragraph respecting reclamation. There are not many instances of tenants losing altogether the value of improvements effected at their own expense, through eviction or disproportionate increase of rent, but there are undoubtedly such cases.

The general impression is, that the tenants would rather invest their labour and money in improving their farms than take pecuniary aid from the landlords for this purpose, as by so doing they consider they establish a sort of lien or claim upon their land in their favour.

On the whole, after carefully going through all the papers and answers submitted to me, and from the inquiries I have made, I have come to the conclusion, that throughout my district the great bulk of the improvements (excepting the re-arrangement of the holdings on the estates in mountain districts,) has been executed by the present and former tenants themselves, entirely at their own cost, without guarantee of any kind, and that this is, and long has been, the custom of the country.

Tenant-right. With respect to the Ulster tenant-right the following propositions seem to me to be established by the inquiries I have made throughout my district:—

In the counties of Donegal, Derry, and Tyrone, the practice of paying the out-going tenant a sum of money for his good-will prevails on nearly all estates. This payment is not intended as compensation for improvements made by the outgoing occupier or his predecessors, and is frequently given where no improvements have been effected, and where the farm has been deteriorated. On some estates attempts are made by the proprietors to regulate or restrict its price; but all such limitations are nugatory, and invariably prove ineffectual to prevent the incoming tenant from making a secret settlement with the outgoer. In all cases the landlord reserves to himself the right of approving of the successor. In general the transaction that takes place is something as follows:—

The outgoing tenant, who is desirous to sell his farm, looks out for a purchaser, and when he has found one, goes to the landlord or his agent, informs him of the intended sale, and names the price which his successor is willing to pay. Most landlords give a preference to tenants on their own estates; and if the incoming tenant is a stranger, the landlord, or his agent, will see if any tenant on his property is willing to give the same price as the stranger; and if so, the tenant gets the farm. If any arrears of rent are due by the vendor, they are almost invariably a first charge on the tenant-right money, and they are paid over to the landlord, whose agent is frequently present when the actual transfer takes place; and many agents and landowners advocate the practice as thus affording a good security for the rent.

If tenant-right were disregarded, and the tenant evicted without having received the price of his good-will, outrages would sometimes follow, and the landlord would find it impossible to obtain a successor willing to take the farm.

In some individual cases the tenant-right has been disregarded, and no evil consequences have been the result, but there can be no doubt that any systematic attempt on an extensive scale, to destroy the Ulster tenant-right, would be attended with serious danger to the tranquillity of the country.

The custom is not confined to tenants holding at will, but, in many cases extends to leaseholders, who expect to be paid for their

good-will on surrendering their holdings at the termination of the leases, and it is not found that the difference of tenure causes much difference of price.

The tenant-right can, in general, be defined, and a value put upon it, at so many years' rent, or at so much per acre, and this value varies very considerably in different localities, but it may be stated as a general proposition that small holdings, owing to the greater competition for them, command a higher price than large. The price is always affected more or less by the condition of the farm, its rent, the character of the landlord and agent, and other local circumstances.

In Inishowen, the price varies from about 5 to 12 years' rent. and on one or two properties as much as 20 years' rent has been given. In the western parts of Donegal, except on Lord Leitrim's estate, where the custom of selling the tenant-right is not permitted, the price varies from 20 to 30 and even 40 years' rent. Here the farms are in general very small.

In the eastern part of Donegal, where the holdings are large, the price is much smaller, and varies from 10 to 15 years' purchase of the rent.

In Fermanagh, the Ulster tenant-right custom exists upon many estates in a modified form, restrictions being imposed which are almost unknown and would hardly be tolerated further north. Some proprietors, indeed, decline altogether to acknowledge or permit it; while others allow it, under certain well-defined restrictions. And it may be interesting to state what are the various usages which, so far as I could learn, are in force on the most important properties in the county.

On Sir V. Brooke's estate, the price is settled by arbitration, the seller and buyer each naming an arbitrator, and the landlord an umpire, and the value is regulated according to the condition of the farm and improvements on it.

On Lord Erne's estate, the price is fixed at 5 years' rent and the value of improvements made, but this restriction seems to be frequently evaded.

On Lord Enniskillen's estate, it is limited to $2\frac{1}{2}$ years' rent and the outgoing tenant must surrender his holding to the landlord.

On Lord Ely's estate, it is limited to 3 years, except where extensive improvements have been made by the outgoing tenant.

I am informed that, on the Rev. Mr. Porter's estate, it is not permitted to exceed 2 years' rent, and if the farm is left in an exhausted state nothing is allowed.

On Captain Archdall's estate, I am told that it is also limited to 2 years' rent and the value of improvements.

On Mr. D'Arcy Irvine's estate, and also on some others, it is not allowed at all.

It has been represented to me that several landlords who own small properties do not interfere with their tenants at all in these matters, but leave them to make what arrangements they please.

Leases.

The expense of stamps on leases has been strongly dwelt on in some of the communications which I have received. Mr. Sankey, agent of the Colebrook estate, on which there is a large number of leaseholders, makes the following remarks:—

"At present the progressive duty is far too high. Irrespective of the legal fees to an attorney few leases can be taken out under £4, even though printed forms be used, as on this estate; and where an attorney is employed the price amounts generally to £7. This deters many from taking out leases.

"I am strongly of opinion, that, as recommended by the Devon Commission, all contracts respecting land should bear the uniform stamp of one shilling, and *that no progressive duty should be charged*, as it is not easy to draw up the requisite number of clauses in a lease within the prescribed number of folios, and when this is exceeded the progressive duty doubles the amount of stamp."

Valuation.

Mr. Ramsey, an extensive farmer in the county Donegal, makes the following observations on the subject of valuation :—

"I may observe, that if a reasonable and proper standard of valuation —to be adjusted from time to time by competent and independent valuators—were adopted as a basis of all letting, and if all transactions between landlord and tenant were regulated accordingly—tenant right as existing in this province being made law—I do not see that fixity of tenure in any other form would benefit either of the contracting parties —the hardworking, honest, and peaceable tenant, who has most improved his holding, being generally the greatest sufferer, where an unkind and exacting landlord wishes to take undue advantage of his position."

Notices to Quit.

So far as I can learn notices to quit are, throughout my district, of rare occurrence. It is, however, the usual practice to resort to such notices on the occasion of a re-valuation of an estate, with a view to an increase of the rental, or when the occupiers are disputing and quarrelling amongst themselves about the boundaries of adjacent farms, &c., &c., and the landlord or his agent wishes to adjust and determine the matters in difference between them.

On this subject I extract the following statement of Major Ellis, Chairman of Omagh Board of Guardians, an extensive land agent in the county Tyrone, as it affords a clear illustration of the advantage to be derived from a judicious exercise of the power which the serving of a notice to quit confers in the last-mentioned class of cases. He says that—

"Tenants are never evicted, but notices to quit are often served—generally to enforce the award of the landlord or agent in the oft-recurring cases of disputes brought before them. These disputes are, for the most part, as to boundaries and fences, and rights of turbary. I hold courts periodically to settle these cases; the tenants willingly submit them to my award, but in many instances the party against whom the decision is given would not abide by it if I had not the power of enforcing it by notice to quit. Should such be taken away it would be essential to substitute some other in its place, or else the disputes would either be left unsettled, or recourse must be had to the superior Courts in trifling matters, a course which would be most expensive to small tenants."

Owners of property bought in the Landed Estates Court, often raise the rents and make new arrangements on entering into possession of their new estates, and in such cases they ordinarily cause the tenants to be served with notices to quit. In many instances this course appears to cause much dissatisfaction amongst the tenantry. I have received the following particulars from a tenant on a recently purchased property.

The rent paid by him to the former landlord amounted to

£16 16*s*. The Poor Law valuation of the holding was £17. The rent demanded by the new proprietor is £49 10*s*., or three times the old rent. The rents of other holdings on the same property have been doubled and in some cases trebled.

It is not uncommon, I believe, for the purchasers of small lots in the Landed Estates Court to remove the former tenants, in order that they may themselves enter into occupation of the lands. I have not been able, however, to discover any real authenticated instances of hardship, though I have heard numerous complaints.

I am informed that, on the Earl of Leitrim's estate, in the county Donegal, it is the practice to serve the whole body of tenantry with notices to quit in the month of April every year.

The custom of tenant-right is not recognised, and I believe compensation is not given for improvements effected by the tenants.

The tenant-right custom was allowed by the late Earl of Leitrim; and I understand in his time the condition of the estate was much improved, but under the present system of management no improvements are effected by the tenantry, owing to the feeling of uncertainty and insecurity which prevails.

I append a summary of the ejectment decrees for the counties Donegal, Londonderry, Tyrone, and Fermanagh, for the years '66, '67, '68, and '69, (marked A).

On all properties where the tenant-right custom exists, it seems to be the general practice to charge dowers and portions in favour of daughters and younger sons upon the tenant-right, and in most cases these bequests appear to be respected. Dowers for younger Children.

Employment in shirt-making is given to a very large extent in the town of Londonderry, and for a circle of twenty miles around, but is wholly confined to this locality. Non-agricultural Occupations.

Woollen clothes and flannel are made for domestic use throughout the whole of the county Donegal. In the west of the county the knitting of woollen stockings has prevailed to a great extent for a large number of years. The trade is now an extensive one, and affords much employment to the otherwise unoccupied female population.

Mr. M'Divitt, of Glenties, pays on an average about £165 a week for work done in this district, thus giving 4*s*. a week to above 800 families the whole year round.

The inhabitants near the coast were formerly much occupied in the fisheries, and in the making of kelp from sea-weed. But of late years the fisheries have not prospered, and the kelp trade has been declining.

Hand-loom weaving was at one time extensively carried on, but I may say has now nearly ceased.

The only non-agricultural occupations practised in the county Derry are the shirt-making above mentioned, and "flax-scutching," or the preparation of the raw material for the linen manufacturers.

In Tyrone, the manufacture of linen-yarn is extensively carried on in some places.

In Fermanagh, with the exception of the potteries at Belleek, there is no manufacturing industry of any kind.

Large numbers of the labouring population go to Scotland and England, from the mountain districts of Donegal, for the harvest. Labouring Class.

Many, again, are in the habit of getting employment in Scotland during the greater part of the year, and return in the spring to plant their crops, after which they go away, leaving their gardens in charge of their wives and children and their aged relatives. They bring back whatever money they may have saved, and usually spend a portion of the winter at home.

Throughout the remainder of my district, the practice of going away to such employment does not exist to any appreciable extent, as there is an ample demand for labour, at good wages, nearer home.

I have the honour to be,
Gentlemen,
Your obedient servant,
R. HAMILTON.

The Poor Law Commissioners,
Dublin.

A.

SUMMARY EJECTMENT DECREES

In the County of DONEGAL for 1866, 1867, 1868, and 1869.

—	On Notice to Quit.			On Expiration of Lease.	For Non-payment of Rent.	Rent Due.
	Against Agricultural Holders.	Against Householders, Roomkeepers, Cottiers, or Labourers.	Against permissive Occupants, Caretakers, and where Premises are deserted.			
Decrees in 1866,	64	1	–	2	128	
Do. 1867,	35	–	1	–	89	
Do. 1868,	78	–	2	2	84	
Do. 1869,	52	–	–	1	66	
Total, .	229	1	3	5	367	

DECREES EXECUTED BY THE SHERIFF OF THE ABOVE COUNTY.

Decrees in 1866,	37	–	–	–	37	
Do. 1867,	23	–	–	–	20	
Do. 1868,	39	–	2	–	32	
Do. 1869,	20	–	–	1	13	
Total, .	119	–	2	1	102	

SUMMARY EJECTMENT DECREES

In the County of LONDONDERRY for 1866, 1867, 1868, and 1869.

—	On Notice to Quit.			On Expiration of Lease.	For Non-payment of Rent.	Rent Due.
	Against Agricultural Holders.	Against Householders, Roomkeepers, Cottiers, or Labourers.	Against permissive Occupants, Caretakers, and where Premises are deserted.			
Decrees in 1866,	17	21	–	–	75	
Do. 1867,	23	37	2	–	96	
Do. 1868,	31	22	1	–	112	
Do. 1869,	29	25	–	–	72	
Total, .	100	105	3	–	355	

DECREES EXECUTED BY THE SHERIFF OF THE ABOVE COUNTY.

Decrees in 1866,	–	–	–	–	–	
Do. 1867,	–	–	–	–	–	
Do. 1868,	–	–	–	–	–	
Do. 1869,	–	–	–	–	–	
Total, .	–	–	–	–	–	

SUMMARY EJECTMENT DECREES

In the County of TYRONE for 1866, 1867, 1868, and 1869.

Decrees in 1866,	30	16	–	1	76	
Do. 1867,	26	8	2	1	83	
Do. 1868,	35	9	3	4	94	
Do. 1869,	31	12	1	3	73	
Total, .	122	45	6	9	326	

DECREES EXECUTED BY THE SHERIFF OF THE ABOVE COUNTY.

—	On Notice to Quit.			On Expiration of Lease	For Non-payment of Rent.	Rent Due.
	Against Agricultural Holders.	Against Householders, Roomkeepers, Cottiers, or Labourers.	Against permissive Occupants, Caretakers, and where Premises are deserted.			
Decrees in 1866,	14	–	–	–	20	
Do. 1867,	14	–	1	–	15	
Do. 1868,	18	–	–	2	16	
Do. 1869,	12	–	–	2	14	
Total, .	58	–	1	4	65	

SUMMARY EJECTMENT DECREES

In the County of FERMANAGH for 1866, 1867, 1868, and 1869.

Decrees in 1866,	25	–	1	3	20	
Do. 1867,	24	–	–	–	17	
Do. 1868,	19	1	3	5	42	
Do. 1869,	18	–	1	–	41	
Total, . .	86	1	5	8	120	

DECREES EXECUTED BY THE SHERIFF OF THE ABOVE COUNTY.

Decrees in 1866,	4	–	–	–	26	
Do. 1867,	6	–	–	–	10	
Do. 1868,	4	1	–	2	9	
Do. 1869,	2	–	–	–	8	
Total, .	16	1	–	2	53	

II.—REPORT FROM MR. HORSLEY.

District comprising the County of Kerry and parts of the Counties of Cork and Limerick.

Killarney, January 14th, 1870.

Gentlemen,—Adverting to your communication, with enclosure, of the 2nd ultimo, I have the honour to transmit herewith my report on the existing relations between landlords and tenants in the several Poor Law unions in my district, comprised in the counties of Kerry, Cork, and Limerick, merely premising that those relations, in so far as they have reference to the dealings between landlords and tenants, in regard to the several points embraced in the report are, the result of changes in practice which have, with rare exceptions, taken place between the contracting parties during the last twenty years, viz., from 1850 up to the present time, but more especially during the last twelve or fifteen years of that period.

I have the honour to be,
Gentlemen,
Your very obedient servant,
SAMUEL HORSLEY.

Mr. Horsley's Report on the existing Relations between Landlords and Tenants in his District, comprising the entire County of Kerry, seven Poor Law Unions in the County of Cork, and Newcastle Union in the County of Limerick.

Buildings of Farm-houses and offices, and repairs of same.

Within the last twenty years there has been a vast improvement in the character of the farm-houses and offices on large and on moderately sized agricultural holdings throughout my district generally.

The former old inadequate and inconvenient thatched buildings have been superseded by substantial and suitable dwelling-houses and offices built of stone and lime and slated.

This improvement has, generally speaking, been effected at the joint expense of the landlord and tenant, the former providing slate, timber, and lime, the latter drawing the stones, building the walls, and supplying the labour; but there are numerous cases where lease-holding tenants have borne the whole cost of the buildings in question, and, on the other hand, numerous instances where landlords have erected at their own cost all the buildings on the farms of lease-holding tenants, and on those of tenants-at-will also; charging, however, an increase of rent, equivalent to the interest at 5 per cent. on the outlay.

On very small holdings and holdings of small valuation, which

in my district greatly out-number those of large and of moderate extent, scarcely any improvement in the character of the dwelling-houses and offices has taken place within my experience; they present the same squalid and slovenly appearance that has characterised them for generations. Occasionally where the dwelling of a small tenant-at-will becomes uninhabitable from natural decay, the landlord allows timber and a small sum of money, perhaps £5, towards re-building it; but, I believe, this is the exception and not the rule in such cases.

When substantial houses and offices have been erected by the landlord and tenant jointly, or altogether by the landlord and tenant respectively, the tenant is expected to uphold and keep them in repair at his own cost whether the outlay necessary for this purpose be of a trifling or important nature; a few landlords, however, sometimes aid the tenant by giving slate and timber where very extensive repairs have become necessary through no fault of the tenant in occupation.

Drainage.

Any thorough drainage that has taken place within the limits of my district during my long acquaintance with it, has, whether in the case of leaseholders or in that of tenants-at-will, been generally effected at the expense of the landlords and occupiers jointly, the former usually contributing in money or in allowance on the rent, from one-third to one-half of the entire cost. Where the landlord has effected the drainage at his own expense, altogether, or with money borrowed under "The Land Improvement Act," full interest on the money expended or borrowed has generally been imposed in the shape of additional rent upon the tenants or occupiers of the soil improved thereby.

Thorough drainage, however, has not been carried out on a large scale in my district, and whatever has been done in that way has usually been suggested by the landlord and not by the tenant.

In the county of Kerry a greater amount of thorough drainage has been effected than in the other portions of my district, and, in corroboration of this statement, I may mention that, although the Poor Law valuation of the entire county is only one-forty-eighth of the valuation of all Ireland, nearly one-sixteenth of the whole sum borrowed under "The Land Improvement Act" has from time to time been allocated to it, viz., £127,015 out of a sum of £1,981,130, and fresh loans are being sought for by one very large landed proprietor, and also by several minor ones.

It must not, however, be inferred that the sum thus advanced under the Act in question has been applied solely to drainage purposes: much of it has been expended in building and fencing.

Reclamation of Land.

Considering the extent and nature of my district, very little has been done in reclaiming and bringing waste land into cultivation.

Any reclamation that has taken place has, almost without exception, been the work of tenants alone, and, in most cases, of tenants-at-will, who invariably expect—an expectation in which they are seldom disappointed—that they will be left in undisturbed possession of their holdings, without any increase of rent,

for a sufficiently long period to compensate them fully for their labour and capital.

Fencing and Iron Gates.

On farms of any considerable extent or value the boundary fences are generally erected at the sole cost of the landlord, but, as a rule, all the interior fencing is executed—but in a rude and inefficient manner—by the tenants altogether at their own cost; the exception to this rule being, where tenants agree to put up secure and neat fences, properly dividing their farms into convenient fields for tillage or other purposes, and in this case it is usual for landlords to allow about one-half the cost, and to supply quicks, &c., for the ditches.

Iron gates are like "angels' visits—few and far between," and are rarely seen, except upon farms in the occupation of owners in fee, or upon large farms of tenants having leases, or upon holdings in the immediate vicinity of considerable towns.

The majority of the fences on the farms throughout the country are, generally speaking, of a very valueless, and, in innumerable instances, of a pernicious kind. They are insecure, too numerous, occupying an unnecessary quantity of land, curtailing farm produce, and are, moreover, a fertile source of wrangling and litigation among neighbours.

Planting.

Planting is not much attended to, and is rarely—scarcely ever, indeed—undertaken either by leaseholding tenants or by tenants-at-will. It is all the creation of the landlords, who thus utilize and embellish, on a small scale, waste and unproductive soil. In some cases where farms have fallen out of lease, or have otherwise reverted to the owners in fee, belts of trees have been planted to improve bleak aspects, and afford shelter both for stock and crops, but this also has invariably been done at the sole cost of the proprietors.

Cost of Improvements.

Looking to all the information which I have received on the subject from reliable sources, corroborated as it is by a close personal observation of what has been going on in my district for several years past, I have arrived at the conclusion that all the real and substantial improvements under the heads of farm-houses and offices, fencing and thorough drainage have been the joint creation of landlords and of tenants, whether holding by lease or at will, and that the total cost of such improvements has been borne on an average proportion of two-fifths by the former to three-fifths by the latter class.

Security of Tenants for the value of inexhausted improvements effected by themselves.

Assuming that my estimate of the tenants' share in effecting the improvements above alluded to is in the main correct, it remains to be seen what security, direct or indirect, that class possesses for the value of the labour and capital expended by them in this regard.

In the case of lease-holding tenants, some security is afforded by the nature of their tenure for the value of their improvements; but where the improvements have been made in the middle or near the expiration of the term of years for which they hold, they must rely on the honour and equity of their landlords for full or partial compensation for their outlay; but tenants-at-will, who form the great bulk of agricultural holders, possess no security

whatever, either by guarantee that they will receive a fair proportion of the value of their improvements in the event of eviction or surrender, or by guarantee of undisturbed enjoyment of the effects of those improvements for a certain definite period. They must, either in the case of eviction or surrender, depend altogether for being recouped in respect of the inexhausted value of the improvements made by them, upon the fairness and considerateness of their landlords; and it need scarcely be pointed out that this circumstance may and does frequently operate as a bar to any improvements being made by them at all, and consequently acts injuriously on the interests of the community at large, by serving to prevent as much food being produced as the soil might otherwise be made to yield. At the same time, although this class of tenants are positively without any legal security for receiving fair and proper treatment at the hands of their landlords, in practice, so far as my district is concerned, this precarious position is more imaginary than real. Scarcely any well authenticated cases of oppression or extortion on the part of landlords towards tenants-at-will have been brought under my notice within the last twelve years, and happily "Notices to quit" are now very rare and only resorted to in extreme cases; they are not now used, as formerly, as an engine to "keep tenants up to the mark," or to compel them either to increased exertion or to assume an additional amount of rent.

In support of the foregoing observations, I subjoin a tabular statement, showing the number of ejectment decrees obtained against agricultural holders in the county of Kerry during a period of six years ended 1869, and a similar statement for four years ended 1869, for that portion of the county of Cork which is in my district:—

County Kerry.

On Notice to Quit.	On Expiry of Lease.	For Non-payment of Rent.	Total.
92	18	277	387

County Cork.

On Notice to Quit.	On Expiry of Lease.	For Non-payment of Rent.	Total.
40	4	87	131

On the total number of ejectment decrees for non-payment of rent in the county of Kerry, the average time for which rent was owing was two years and two months, and in the county of Cork two years and three months.

The above returns have been made to me by the Deputy Clerks of the Peace for the counties of Kerry and Cork, and I believe them to have been carefully prepared. I have not obtained a similar return for the Newcastle Union, in the county of Limerick, but I have reason to think that if it were obtained it would exhibit an equally satisfactory state of matters.

I do not mean to convey, however, that numerous surrenders of holdings may not have occurred in both counties on account of pressure for payment of rent or upon other grounds, without actual recourse to legal proceedings having been taken by the landlords; but, on the other hand, I believe that in several cases the haberes or ejectment decrees obtained were not executed, amicable and fair arrangements having subsequently been carried out to the mutual satisfaction of landlord and tenant.

Although, as already stated, tenants-at-will possess no real security for the value of the improvements made by them, it has been customary for landlords in my district to deal fairly with holders of this class whenever they wished to surrender their farms with a view to emigration or an abandonment of agricultural pursuits; and I am not aware of any instances where—except in the case of a change of owners of property—the landlord has closed upon or appropriated to his own benefit the value of inexhausted improvements; nor has it, so far as I can learn, been the practice of landlords in my district to raise the rents of tenants-at-will on account of the enhanced value of their holdings derived from their own skill, labour, industry, and capital.

Increase of Rent.

There has been a steady increase in the amount of rent receivable by landlords, whenever new settings have been made or fresh agreements entered into, within the last seven or eight years; but this rise in rents has not been owing to improvements created by the tenants, but rather to a great rise within that period in the prices of the staple commodities of farm produce in my district, viz., of butter, cattle, sheep, and pigs.

It is right here to say, that almost the entire extent of my district is devoted to dairy and pastoral purposes, in contradistinction to cereal cultivation.

Increase or decline of Agricultural Improvements.

Agricultural improvements have been, and still are, decidedly on the increase throughout my district, though for the last year or two some check has been given to them, in a few instances, in consequence of misgivings as to what the future relations between landlords and tenants may become.

Ulster Tenant-right custom.

Ulster tenant-right custom does not exist as a system in any part of my district; but in every Poor Law union within it, there have been instances of out-going tenants being permitted by the landlord or agent to sell their interest or good-will to incoming ones, and so far as I can learn this practice is rapidly spreading, and it may well do so, as the amount surreptitiously—that is to say, without the consent of the landlord or agent—paid to out-going tenants by their successors for good-will or quiet possession, is very seldom moderate and oftentimes preposterous; but, in point of fact, no well-defined money-value can, as a rule, be set upon these transactions.

Dowers and portions for younger Children by Tenants-at-will.

The information I have received upon this subject is various and conflicting, but I gather from it that tenants-at-will, by testamentary recommendations, if not actually by will, almost invariably make some provision for their widows and younger children. This is generally effected by a division amongst them of the value of the stock and chattel property on the holdings, and this arrangement is made in the expectation that the eldest sons will succeed to the occupation of the farms, and that the fortunes or dowers that they receive with their wives will enable them to purchase, at the death of their parent or parents, the stock and chattels on the lands. This practice does not amount to a charge upon the occupations, but it frequently cripples eldest sons and acts indirectly to the prejudice of the landlords' interests.

Tenants-at-will, in some instances, will the occupancy of their holdings to the eldest son, widow, or some other one member of their respective families, subject to conditions of the nature above described; and in this respect they may be said to act as if they were owners in fee; but I need scarcely say that such wills are valueless in law, and, in point of fact, frequently lead to litigation and family quarrels of the most distressing kind, sometimes resulting in the landlords resuming possession of the soil.

I have been told of a few cases where farms held at will have been given to trustees for the benefit of children, but this does not amount to a charge upon the lands; upon the whole, therefore, I am disposed to think that charges upon occupations of tenants-at-will in order to provide dowers or portions for younger children, cannot be said to have any real existence in my district.

Manufacturing Industry.

Manufacturing industry, either upon a large or small scale, does not—so far as I have been informed or have observed for myself—exist within my district.

Hand-loom weaving of linen and woollen fabrics, which used formerly to be somewhat prevalent in villages and the rural districts, has ceased almost altogether as a means of livelihood or occupation for any considerable number of the inhabitants; and there are but few factories—and those at great distances from one another—for the production of clothing materials.

Home fabrics, with the exception of a little home-made flannel and frieze have fallen almost altogether into disuse amongst the population, and have been succeeded by shop goods, generally procured from English and Scotch markets, and in some rare instances from factories in very large towns, such as Belfast, Cork, Limerick, and Waterford.

A little ornamental needlework, performed at convent schools, and sometimes in the houses of the peasantry, finds its way into the English and Scotch markets, but the labouring and industrial population is not benefited thereby, either in the way of employment or remuneration to any appreciable extent.

The Labouring Population.

Formerly a considerable per-centage of the labouring population used annually to resort from my district to England, Scotland, and Wales, for the performance of harvest-work; but for the last seven or eight years, at least, it has been gradually decreasing up to the present time, and I think I may safely state that not more

than 1 per cent. of this class now seek for harvest employment out of their own country.

This remarkable change is attributable to two circumstances, viz., the large emigration which has been going on of the young and able-bodied labourers of both sexes to America, ever since the cessation of the great famine; and to the great rise which has taken place within the last twenty years, but more especially within the last three or four years in the rate of agricultural and other wages.

A few labourers go over to Wales and Cornwall with a view to obtaining employment in mines, but not in factories, and these, when going, have no fixed intention of returning within any definite period to their own country.

It will be observed, that in the foregoing Report I have confined myself to the topics suggested in the letter addressed to the Poor Law Commissioners by the Chief Secretary for Ireland, on the 30th of November last, and that I have not considered it necessary to interlard it with extracts from the correspondence that has passed between myself and the numerous parties to whom I applied throughout my district for information bearing upon the whole subject of the existing relations between landlords and tenants in Ireland; and I will content myself with remarking that the Report applies fairly and impartially to every Union within my district, and that I have abstained from indicating particular properties or their owners, inasmuch as such a course might be considered invidious, and also, as the practice of landlords in their dealing with their tenantry, whether leaseholders or tenants-at-will, has been, as nearly as possible, uniform, according to their respective means.

SAMUEL HORSLEY,

Poor Law Inspector.

January 14th, 1870.

III.—REPORT FROM MR. ROBINSON.

DISTRICT comprising the COUNTY of WICKLOW and parts of the COUNTIES of CARLOW, DUBLIN, KILDARE, KILKENNY, MEATH QUEEN'S COUNTY, and WEXFORD.

Dublin, 15th January, 1870.

GENTLEMEN,—I have the honour to acknowledge the receipt of your letter of the 2nd ultimo, communicating to me the desire of His Excellency the Lord Lieutenant to obtain, through the Poor Law Inspectors, information on various points relative to the position of the occupiers of land in Ireland.

For the purpose of ascertaining as many particulars as possible on this subject from different parts of the district in my charge, I wrote to a number of owners of property, and agents, forwarding printed questions, which I requested them to answer in reference to the management of their estates, or the estates with which they are connected, and these queries embodied nearly all the points alluded to in the letter addressed to you by the Chief Secretary of His Excellency the Lord Lieutenant. The majority of the gentlemen referred to freely gave me the information sought for, and I have to express my obligation to them for the assistance they thus afforded me. I also obtained evidence in the different counties I visit from the Collectors of Poor Rate and Income Tax, who are, in many instances, tenant-farmers themselves, and are, in all cases, well acquainted with the circumstances and position of the occupiers of land, and I have consulted several other persons who are conversant with the subject, and have much practical knowledge of the dealings between landlord and tenant.

From these various sources I derived much information, which I beg to lay before you, in a condensed form, in the following Report.

IMPROVEMENTS.

With reference to this part of the subject, I find that, as a general rule, the improvements—by which I allude to the erection of dwelling-houses, and farm-offices, works of drainage, fences, &c.—have been made by the tenants. There are, no doubt, exceptions, and there are estates on which the landlords have effected improvements at their own cost; some also have built and drained, charging the occupiers a per-centage on the outlay, and many others would be willing to extend this system were it acceptable to their tenants, but tenants ordinarily evince a strong disinclination

to pay an increased rent, even if it is only a moderate per-centage on the landlord's outlay, and they prefer to expend their own money, with such assistance from the landlord as they can gratuitously obtain. It is now a very general practice on the part of proprietors to aid in building operations, and to contribute towards the expense by finding slates and timber where the tenant will make a stone and mortar wall. This custom is not confined to any particular locality, but prevails in all the counties in this district, and I believe that improvements in respect of farm-buildings and offices, are generally on the increase.

In regard to drainage, it has in many places been carried out under the Land Improvement Acts, and the Report of the Commissioners of Public Works for 1868 shows that the loans to landowners, sanctioned for works then in progress, amounted, in the counties into which my district extends, to £30,455 ; a portion of this had been obtained for buildings, but by far the greater part for drainage purposes.

On some estates the tenants are assisted to drain by receiving from their landlord a portion of the cost, but there is not very much done towards the permanent improvement of land by drainage, unless when it is carried out, as before mentioned, by loans from the Board of Works.

The fences are usually made by the tenants; sometimes they are given iron gates when they build suitable gate-posts, and occasionally they are allowed quicks, or are otherwise assisted to keep the fences in good order.

There is not much money laid out in this district in the reclamation of waste lands, except by means of drainage; in some places a tenant is given lime by his landlord to improve and reclaim his ground, and when he does so, and cultivates a portion of mountain or cut-away bog, he is usually allowed to hold it for some time at a mere nominal rent, and thus repays himself for his outlay.

Planting on tenants' holdings is not extensively carried on, and generally it is only to such an extent as may be necessary to make shelter for the cattle.

Some tenants who have leases plant and register their trees, when they become their own property, but planting in my district is very much confined to land in the occupation of the owners.

It appears, therefore, from all the information I have obtained on this branch of the subject, that the dwelling-houses, offices, fences, and other works existing upon the farms in this district, have been mainly created at the cost of the present tenants or their predecessors, and I will now proceed to consider how far the tenants have security for the value of their improvements.

Those tenants who hold under lease, of course reap the advantage of their improvements during a definite period, but I have not heard of any case in which a formal agreement is executed between a tenant-at-will and his landlord, by which the former obtains a guarantee that he will receive a proportion of the value of his improvements in the event of eviction or surrender, or a guarantee of undisturbed enjoyment of them for a certain time.

The only express provisions in writing that have come to my knowledge are contained in the rules of Lord Portsmouth's estate in county Wexford, and of Lord Fitzwilliam's estate in county Wicklow; on the former the Ulster tenant-right custom exists, while on the latter it is not sanctioned, but in both cases the printed rules of the estate secure to the tenants the full benefit of improvements effected at their own cost; the following are the rules referred to:—

On Lord Portsmouth's estate—

"To regard all buildings on the farms as the property of the tenants who built them, or of their representatives, and not to add a farthing to the rent on account of such improvements."

On Lord Fitzwilliam's estate—

"That in cases of change of tenancy, fair allowance will be made to outgoing tenants for improvements done, at their own cost, by them or their family, within a reasonable time, and with Lord Fitzwilliam's consent—regard being had, on the other hand, to any dilapidations or deteriorations that may have been suffered during the same time; allowance will also be made to the outgoing tenant, on a fair valuation, for seed, labour, and manure in the ground, also for any manure, hay, or straw, or green crops on the premises; and the same amount will be charged to the incoming tenant. Should any money be due by the outgoing tenant to Lord Fitzwilliam, the amount will be set off against the sum to be allowed, unless otherwise arranged in the office."

On every estate where the Ulster tenant-right custom is recognised by a proprietor, an understanding of course exists, that a tenant, if he leaves his farm, may receive a sum that will compensate him for his improvements, but in other cases the tenant generally incurs the expenditure, trusting only to the justice and fair dealing of his landlord; in the great majority of cases this confidence is not misplaced, for tenants who pay their rent regularly are very rarely evicted, while the revaluation of a farm held at will, for the purpose of raising the rent, is not of frequent occurrence, and when such takes place the value of the improvements effected by the tenant is very seldom added to the rent. When a farm falls out of lease, a revaluation is usually made, and other reasons occasionally make this course necessary; but I have been informed by two professional valuators, who are very much employed in my district, and who hold a high position in their profession, that when they revalue for the purpose of adjusting the rent, it is usual for the tenants to be allowed the full value of buildings, or other improvements, created by themselves.

Where landlords build for their tenants, I find that it is customary to add 5 per cent. on the outlay, to the rent. In regard to lands drained under the Land Improvement Acts, the proportion of the expense borne by leaseholders is determined by the Board of Works, but proprietors do not always adopt the same course in dealing with their tenants-at-will; in a few instances the landlord pays the whole, while in some others the full amount of the annual instalment is charged to the tenant;

but I find that an addition to the rent of 5 per cent. per annum, on the expenditure, is very commonly made, the difference between that and 6½ per cent., which is the annual instalment payable for 22 years, falling on the landlord; and this arrangement is one that is generally considered to be fair and reasonable.

In the preceding remarks I have alluded to the majority of the estates in this part of Ireland, but, in referring to the dealings between landlords and tenants, I must state that there are a few of the former who do not act in a fair or liberal manner; and I have heard of some, though not many, instances of tenants being harshly treated, and of rent being raised without any allowance for their improvements. One case—although it was a short distance outside the boundary of my own district—came to my knowledge, where a proprietor, who had purchased under the Landed Estates Court, demanded from the occupying tenants about double the rents they had paid before the sale, serving them also with notice to quit; buildings on the land had been erected by the tenants, and the rent asked was much in excess of the value of the farms, and more than double the Government valuation. The circumstance attracted considerable notice at the time, and the proprietor afterwards consented to take a reduced rent; but I mention the occurrence as an illustration of the manner in which some tenants have been dealt with, and as one of those cases that are calculated to create a feeling of insecurity in the minds of the occupiers of land throughout the country, notwithstanding that the landlords who would act in the way described constitute a very small proportion of the whole class.

Evictions.

The subject of notices to quit and evictions, is one on which it is not necessary for me to make any lengthened remarks.

Considering the number of agricultural holdings in this district, there are very few evictions, and these are principally for non-payment of rent; I find, also, that not much more than half the ejectment decrees that are obtained are executed.

Notices to quit are not of frequent occurrence. I am aware that it has been asserted that "it is the practice, on many estates in Ireland, to serve the agricultural tenants from year to year with legal notices to quit, so that they may be every moment at the absolute mercy of their landlords;" but, having carefully inquired into the matter, I do not believe that any such practice exists in this district.

Tenant-Right.

The Ulster tenant-right custom is in existence in part of this district, and in every county the practice prevails to a certain extent. On some estates it is recognised and sanctioned by the proprietors, while on others the payment of money by the incoming to the outgoing tenant takes place, although what is called the tenant-right custom is not admitted to be in force; and I find that upon about one-third of the estates from which I have received returns, the system is either openly sanctioned, or carried on under another name.

On Lord Portsmouth's property, in county Wexford, the principle is more clearly defined than elsewhere, and the following printed document, which was given to me by his lordship's agent, shows the rules under which the tenants on that estate are allowed to dispose of their interest.

"The Earl of Portsmouth's Enniscorthy Estate in the County of Wexford.

"Prior to the year 1822 the greater portion of the lands of this extensive estate was leased to middlemen who sublet the lands to under-tenants at exorbitant profit.

"When leases of buildings in the town of Enniscorthy expired, prior to the year 1822, the builders and their representatives were not always regarded as having claims for new leases.

"This system was disapproved of by the late Earl of Portsmouth (the Hon. Newton Fellowes) father of the present Earl, and the following rules were adopted at his suggestion by the trustees of the estate, for its future management, with the cordial sanction of the late Earl of Devon, who was Master in Chancery in the case:—

"1. In selection of tenants to have regard only to character, skill, and capital, and to make no difference on account of their religion or political opinions.

"2. To set plots of ground for building in the town of Enniscorthy, at low rents, and on leases for three lives or 61 years, provided good buildings were erected on such plots.

"3. On the expiration of leases of town plots on which buildings had been erected, to inquire carefully by whom such buildings had been erected, and to grant new leases of such plots to the builders, or their representatives, at moderate rents.

"4. On the expiration of farm leases, to displace all middlemen, and to set the lands to the occupying tenants, on leases for one life or 31 years.

"5. To set all lands at moderate rents, and in settling such rents, to have regard only to the situation and natural fertility of the soil.

"6. To regard all buildings on the farms as the property of the tenants who built them, or of their representatives, and not to add a farthing to the rent on account of such improvements.

"7. To allow tenants to dispose of the interest in their holdings, by private treaty or public auction, to approved purchasers.

"The unbroken observance for forty-seven years of the above rules has had the following beneficial results:—

"It has inspired with confidence and energy the agricultural tenants, who have changed badly cultivated patches of land into fine farms, now well cultivated and well drained, on which they have erected, at considerable expense, suitable, substantial, and, in many cases, costly residences and homesteads, with all the necessary requirements for good farming. This has all been done without any outlay on the part of the landlord.

"Enniscorthy has been changed from a mere village of mud hovels into an important well built market town.

"All this has been done by Irish tenants on the faith of tenant-right having been accorded to them.

"The rental has increased to more than double, and is now punctually paid instead of being irregularly paid.

"Enniscorthy, June, 1869."

There are one or two estates in my district where the tenant's right to sell his interest is as fully recognised as on Lord Portsmouth's, with this restriction, that if another tenant on the property will give as much as a stranger he must have the preference. There are some others where the sale is limited to tenants living on the estate, and in every case the sale is effected subject to the landlord's approval of the purchaser. The payment is sometimes made as compensation for improvements, but more frequently for the tenant's "good-will," as it is called, by which is meant the privilege of occupying the farm, and in many instances the amount paid greatly exceeds the value of any improvements effected by the outgoing tenant. Where the custom exists it extends to tenants-at-will as well as to leaseholders, and there is not anywhere, as far as I can ascertain, any fixed scale of payment per acre prevailing generally on an estate, or in a particular district, the value of the interest being determined by local circumstances and by the competition.

I have heard of ten years' rent being paid in Queen's County, and of eleven years' rent being paid in county Wicklow, and of a tenant in county Wexford receiving £700 from his successor for a farm of forty-eight Irish acres, and I was also told of a case in county Carlow where a tenant-at-will, paying 15 per cent. over the Government valuation, obtained fourteen years' rent for his holding; in the two last-named instances the houses were in very bad order, and there were no improvements for which the outgoing tenants could claim compensation.

I have endeavoured to ascertain whether the tenant-right custom is or is not spreading and gaining ground, and I cannot learn that any material alteration in that respect has recently taken place.

Dowers.

I find that it is a very common practice among tenants in this country to make their successors in the farms liable for dowers, or portions for younger children; it extends to tenants holding at will, and the custom prevails on estates where the tenant-right system is not recognised, as well as on those where it exists.

Sometimes the member of the family who succeeds as the occupier, is able without difficulty to meet the liabilities created by the will of his predecessor, but frequently the sums which he is thus called upon to pay are so large, and so much beyond his means, that he is hampered and impoverished for years, and I have heard of instances of men having been obliged to give up their farms, and of having been evicted, in consequence of their inability to meet the claims of their relations and to pay their rent.

Manufactures.

Manufacturing industry does not exist in this district on a large scale. In some localities there are mills which afford employment, and in a few places spinning and weaving is carried on; but there is no general non-agricultural occupation, similar

to the hand-loom weaving in Ulster, by which the small occupiers of land partly maintain themselves, and the farmers here, as a rule, confine themselves to agricultural pursuits.

Labourers.

The report I have recently furnished regarding the wages and condition of agricultural labourers, renders it unnecessary for me to say more on this subject than to answer the query—Whether they go over to England or Scotland for harvest or manufacturing work? I find that, although occasionally a few do so, it is not a practice that is by any means general in this district, and that those who leave their own neighbourhood to work elsewhere, usually do so at various seasons, with the view of obtaining any employment they may be capable of performing, but do not periodically visit England at harvest time.

Having now adverted to every point upon which I have been instructed to report, I have, in conclusion, to state that, although the limited time at my disposal to perform this duty only enabled me to collect information regarding a portion of my district, such information was not confined to any particular locality; and I have procured oral or documentary evidence, on the different subjects I have alluded to, from every union in my charge.

The system of management on some estates differs in many important particulars from that on others, and very opposite opinions have been expressed to me during the course of my inquiry; but, in framing my report, I have abstained from stating my own views as to the merits or demerits of any particular system, thinking that if I were to do so, I should travel outside my instructions, and I have endeavoured to confine myself to facts, and to make as correct and fair a representation as possible of the position of the occupiers of land in this part of Ireland, and of the ordinary existing relations between landlord and tenant.

I have the honour to be,
Gentlemen,
Your obedient servant,
HENRY ROBINSON.

The Poor Law Commissioners.

IV.—REPORT FROM DR. BRODIE.

DISTRICT comprising parts of the COUNTIES of CAVAN, CLARE, GALWAY, KING'S COUNTY, LEITRIM, MAYO, ROSCOMMON, SLIGO, and TIPPERARY.

Galway, 14th January, 1870.

GENTLEMEN,—I have the honour to acknowledge the receipt, in due course, of your letter dated 2nd ult., transmitting a copy of a letter received by you from the Chief Secretary of the Lord Lieutenant, communicating His Excellency's desire to obtain through the Poor Law Inspectors' information on various points relative to the position of the occupiers of land in Ireland.

As soon as practicable, after the receipt of your letter, I issued circulars to the principal landowners and agents, to some tenant-farmers and others, most capable of affording information on this important question, together with a form of queries adapted to elicit the required information. My communications have been pretty freely responded to. The replies have chiefly come from those who deal fairly with their tenants, or wish to have it understood that they do so.

I have besides made close personal inquiry in the several parts of the district under my supervision, and beg to submit the following report:—

IMPROVEMENTS ON SMALL HOLDINGS.

The prevailing practice in regard to improvements varies very much, and is influenced by the extent of the estate and the size of the holdings, by the means and inclination of the owner as well as other circumstances.

The first class to which I shall refer, are those executed on the holdings of small occupiers, as the information I have obtained tends to exhibit a nearly uniform rule, viz.,—

Houses and Offices.

That the houses and offices are built and kept in repair by the tenants. When a new house or office is built or rebuilt, it is usual with a large number of landlords to allow the timber required for the roofing of thatched houses. When a slated house is built, which rarely happens on small holdings, the landlords often give or allow for timber or slates, and in some instances for both.

Drainage.

Drainage, to whatever extent it has been executed on small holdings, has been done by the tenants.

Reclamation of Land, &c.

The reclamation of waste land, the conversion of cut-away bog, heathy and rocky soil, to tillage or pasture, has been effected by the small holders.

Fences and Iron Gates.

The fences, such as they are, are also of their erection. Iron gates are not generally erected on small holdings.

Planting.

As a rule, all planting worth speaking of has been done by the landlords.

The practice in this respect is of long standing, the great majority of tenants of this class deriving in succession from father to son.

It may be fairly said that the present productive value of the land in the small occupiers has been of their own creation. There is, however, little disposition on the part of the small tenants to make improvements of an expensive character: this, of course, is owing very much to the fact, that they are nearly all tenants-at-will.

Many landlords, indeed, deny to this class the merit of making any improvements at all, on the ground, that what is necessary for the support of their families and payment of rent, has no claim to that character.

Landlords generally do not take much interest in the improvement of small holdings. This may be accounted for by the trouble and expense it would involve, and probably by the expectation of being able, from time to time, to increase the size of the tenements.

Roads.

All the public roads are made and kept in repair, by Grand Jury presentments—the expense falling on the tenants exclusively. Occasionally landlords contribute something towards the formation of private roads for the convenience of their own tenants.

Landlords sometimes promote presentments for new roads, with a view to the improvement of their estates, and in those cases contribute such proportion of the expense as may be fixed by the Grand Jury; the cost of maintenance subsequently falls on the occupiers.

There is a second class of improvements, with regard to which there is little difference of opinion.

Consequent on the famine and emigration, and the desire for consolidation, a large quantity of land was taken up from small tenants by the owners, and either retained in their own hands or set in grazing farms. These lands may have been reclaimed by the evicted tenants or their predecessors, but the recent improvements of draining, fencing, &c., have been made by the landlords.

With regard to drainage, I may here remark, that the important works of arterial drainage have been carried out by the Board of Public Works, and the greater part of the extensive thorough-drainage of land under the Lands Improvement Acts. Some wealthy proprietors have drained largely at their own expense, or by arrangements with their larger and more solvent tenants.

One well-known extensive purchaser of land in the county of Galway, after getting rid of the tenants in occupation, laid out the property in large farms, drained, fenced and built large farm steadings.

Improvements on large Class of Holdings.

On many of the larger and well-managed estates, the tenants of a superior class, equally with the smaller tenants, enjoy continued occupancy by descent or succession, and are very generally tenants-at-will.

Under some landlords the tenant improves according to his ability and inclination, at his own expense, in the confidence that his occupation will not be disturbed nor his rent increased.

Slated Dwellings. The general practice in regard to the erection of slated dwellings and offices is, that the landlord gives slates and timber, or makes an equivalent allowance to the tenant.

Drainage. Draining and reclamation is either done by landlord and tenant jointly, or by the landlord alone, charging 5 per cent. to the tenant on the outlay.

Fencing. Fencing devolves altogether on the tenant in most cases. Liberal landlords contribute one-half towards the erection of iron gates, and sometimes furnish them free of cost.

Planting. Even the better class of tenants do not plant trees, except in some cases a little for ornamentation about their dwellings.

In nearly all cases of improvements by tenants to which the landlords contribute, they must be executed by owners' consent and approval.

I have much pleasure in noticing a few of the cases of good landlords (resident) who take an interest in the prosperity of their tenants, and liberally encourage them to improve. The agent to a landlord of this class, a nobleman who owns estates in the unions of Mountbellew and Ballinasloe, in the county of Galway, has furnished me with particulars of the outlay for improvements within the last 16 years. The items are—

Slated buildings, ...	£2,240	
Thatched buildings, . . .	2,500	
		£4,740
Improvement of land—		
Under Board of Works, . .	£7,650	
By landlord, in drainage, &c., .	8,720	
		16,370
		£21,110

During this period, from amongst 640 tenants, there were only 7 ejectments for non-payment of rent, and 3 only on title; of the latter, but 1 was the absolute exercise of landlord-right to remove a tenant for misconduct.

On the estate of another nobleman in the unions of Ballinasloe and Loughrea, there has been expended, according to the testimony of the agent, during the ten years to July, 1869, four and a half times the amount of the Ordnance valuation upon buildings, drainage, fences, gates, &c., exclusive of any expenditure on the demesne and other lands in the hands of the owner.

Security by Custom or Practice for the Value of Improvements.

There is no security for the tenant-at-will that he will be allowed for the value of his improvements, either by compensation or undisturbed enjoyment; all depends on the good feeling and generosity of the landlord. When improvements are made with the knowledge and approval of the landlord, there is an expressed or implicit understanding that the tenant shall not be deprived of the value of his outlay. There is besides, on the part of the tenants, a pervading feeling of right to continuous occupancy so long as the rent is paid.

Leaseholding tenants, of course, enjoy the benefit of their improvements during the continuance of the leases; but on failure to meet their rents, or on the expiration of the leases, they stand in the same position as tenants-at-will, dependent on the good-will of the landlord.

Some few of the larger class of tenant-farmers make special agreements with their landlords in respect of extensive improvements.

For the purpose of getting quietly rid of tenants, landlords often give something, rather for the occupation right than for improvements.

Although most, of even the best landlords, will not admit it in principle, there is, in fact, some tacit acquiescence in the tenant's right to possession so long as he fulfils his obligations. I have ample evidence of this feeling before me in the replies received from many owners and agents of large estates.

I could select examples from the counties of Galway, Roscommon, and Leitrim, where the more indulgent landlords testify, under their own hands, that they allow their tenants continuous and undisturbed occupancy, or the right to sell the "good-will" of their holdings. The recognition of the occupation right of the tenant, irrespective of improvements, is far and away more important in the eyes of the tenants, and more conducive to contentment, than any measure of compensation.

On the estate of a nobleman already referred to, who is remarkable for kind treatment of his tenantry and interest in their improvement, the practice is to allow 21 years' enjoyment of improvements, or full value in case of disturbance in the occupancy.

On the estate of another nobleman in the Ballinasloe Union, full allowance is made to any tenant leaving a farm, for the value of permanent improvements.

In the case of extensive estates in the counties of Roscommon and Mayo (the property of an absentee nobleman), rents are fixed by valuation for a period of 21 years; and, in the event of a tenant being turned out, he is paid the value of his improvements for the unexpired portion of that term, and, in some instances, receives a further sum not exceeding 3 years' rent.

In other cases I find that the tenants rely on the known disposition and practice of the owner to allow undisturbed occupation without increase of rent, or to permit the sale of their "good-will" and improvements—the landlord approving of the incoming tenant.

Increase of Annual Rents, &c.

I find on the part of the owners and agents of large estates an almost unanimous disclaimer of any attempt to increase the annual rent in consequence of improvements made by the tenants. When the owners of these estates either make expensive improvements at their own expense, or assist the tenants in making them, the general rule is to charge 5 per cent. on the outlay; this practice refers principally to those recognised as "good landlords," and to large holdings.

With few exceptions, the expiration of a lease is regarded as the basis of a new contract, irrespective of past transactions, as far as regards the future rent.

The prevailing custom on the estates of large proprietors to allow their tenants the enjoyment of their improvements without increase of rent, being dependent on the personal feeling of the owner for the time being, the tenant has obviously no security whenever a change occurs in the ownership. Very often the change of an agent materially affects the interest and prospect of the tenants; and the sale of an estate, severing old associations and ties more or less binding, leaves them entirely at the mercy of the purchaser.

I may here venture to say that if the voluntary action of good landlords in dealing with their tenants had any compulsory sanction or legal recognition, no legislative interference would be required in their regard. But it must be acknowledged that the most liberal landlords claim entire personal freedom in their relations with their tenants, the right to be generous and benevolent in their own way, and according to their own will, though surrendering in practice, to retain in point of law, the right "to do what they like with their own."

Outside of the large owners above referred to, there is a large class of proprietors with incomes ranging, say from £400 to £1,000 a year, whose tenants are, for the most part, more dependent and less self-reliant than those under the former class of landlords.

Under the owners of these small estates increase of rents is quite common without regard to tenants' improvements.

During the famine period reductions and abatements of rents were unavoidable. When the country began to recover from this calamity, and especially after the advent of the Russian war, when cattle and produce began to increase in value, there was a general revision and increase of rents, without any regard to past circumstances or the question of improvements. This rule prevails on small estates, the competition for land and the tenancy from year to year enabling the landlord to impose any conditions he pleases.

In considering the question of increase of rents the operations of the Incumbered and Landed Estates Courts hold a prominent place, to which I shall further refer.

Loss of Value of Improvements.

Under the head of loss of value of improvements I may begin by quoting the words of the owner of a considerable property in the Galway Union, a gentleman whose words would carry weight with any section of the community. He says, there are "enough of cases to cause discontent and to prevent improvements."

A nobleman who owns estates in several counties, testifies by the simple answer, "Yes," that there are many instances in which the tenants have lost the value of their improvements through evictions or disproportionate increase of rents.

During and immediately subsequent to the famine years, there was on the part of some proprietors what may be called a mania for clearance and consolidation of holdings. There is now no controversy that many of those evicted tenants, if allowed to remain in possession, would be as comfortable, solvent, and prosperous as any others of their class in the country.

Before alluding to other specific cases, it is necessary to refer to what has occurred under purchases of land in the Incumbered and Landed Estates Court. Upon no other point is the testimony of all classes so unanimous as that the greatest hardships, both as regards evictions and exorbitant increase of rents, have been inflicted by purchasers in these Courts. Public opinion, in their regard, has undergone a great revulsion, and what was some time since praised as a boon is now decried as an evil, both on account of the injustice suffered by tenants at the hands of the new owners, and the present embittered feelings of the occupiers of land against the existing land laws.

Many of the purchasers in these Courts were land agents or deputy agents, farmers, shopkeepers, and attorneys. Some few were theorists. Many more were speculators. The eager desire to become proprietors of land for social distinction, profit, &c., induced men to purchase more than they could pay for, and loans became a necessity. One of this class of purchasers, in my district, borrowed £20,000 from an Insurance Company. With the speculative purchasers increase of rents, as far as could be borne, was made to provide for interest on cash and loans, and for the discharge of debts incurred. Under purchasers of the description mentioned evictions or exorbitant increase of rents ensued.

In the present state of public opinion it seems a matter of surprise and regret that the Legislature took no heed of the rights or interests of the tenants on the estates to which the jurisdiction of the Incumbered and Landed Estates Court applied.

It is but right to observe that some good landlords have increased their estates by purchases in these Courts, and that the occupiers have no reason to complain of the change of owners.

A Justice of the Peace for the county of Galway, himself a landowner, has furnished me with some specific cases of eviction, involving loss of improvements. One case is thus particularized:—

"A substantial dwelling is being just pulled down. The tenant owed no rent that he was not able and willing to pay to the day. His relatives built the house and offices and lived there for generations. Over

thirty years' rent of the value of the holding was expended on it from time to time by the tenants. There was a verbal promise of a lease of thirty-one years, on the faith of which some of the improvements were effected; yet in the face of all this, the notice to quit went forth, the promise was denied, the ejectment issued, and the wretched man was sent forth with a wife and a large helpless family, into the world, without a shelter and without a farthing compensation."

Having visited the locality, the place was pointed out to me, and I saw the landlord's horses and men engaged in removing the materials of the dwelling-house.

My informant adds—

"But though I do not wish to see any just rights invaded, the sooner Parliament deprives Irish landlords of a cruel power, the better for the nation at large."

A leasehold estate, held under the see of Tuam, was sold in the Incumbered Estates Court in the year 1855 or 1856; and the new purchaser, on entering into possession, increased the rents to two and a half times their previous amount. This was a special and indisputable case of the productive value of the soil being the creation of the tenants or their fathers.

Capricious evictions are a source of great heart-burning, and especially when effected through the representations of agents or bailiffs from interested motives. I take a few examples of cases that have occurred on an estate in my district. The landlord does not reside, and his agent, by general repute, is not a person fit to wield the almost irresponsible power confided to him.

P. C. had his rent paid to the day; was turned out, and his holding given to the agent's brother.

Q. C., who improved and valued his improvements and good-will at £150, was evicted, and not even allowed to remove his manure.

Q. W. bought the good-will of a holding, and was evicted at the expiration of a year without cause.

P. B. took a large farm, expended £300 in clearing, fencing, manuring, and laying down with grass seed; evicted, without cause or compensation, to transfer the land to a favourite of the agent.

Besides the evictions from property bought in the Incumbered Estates Court, there are many cases of clearance of tenants carried out by the old proprietors. This was done to turn the small tillage holdings into large grazing farms.

The following cases of loss of the value of improvements were reported to me from trustworthy sources:—

"A tenant who held a farm of 180 acres of land in the county of Leitrim, drained, fenced, and subsoiled the farm, and built house and offices thereon, also a police barrack, which cost him upwards of £400, yet, after his death, his widow was deprived of the farm and improvements without a shilling compensation, although the landlord is at present receiving £20 a year from the Government for the barrack alone."

An English nobleman purchased, in the year 1851, an estate in the Galway Union. Forty-five tenants were removed by legal process from a portion situate in one electoral division.

Within a few years past all the tenants on another townland belonging to this nobleman were turned out, although they were well able to pay their rents, and had effected improvements on their holdings by clearing the land of obstructions to tillage and fencing. The townland was let to one tenant, and no compensation allowed. The reason assigned for the eviction was, that the tenants quarrelled amongst themselves.

A tenant on a large estate in the Galway Union informed me, that if "the landholders on the property spent money on drainage or reclamation, the rent would surely be increased; and that, though some had money they would wish so to invest, they refrain for want of security of tenure or compensation."

A large proprietor in the county of Roscommon purchased, about seven or eight years since, property on which the tenants are leaseholders; those tenants were allowed by the former landlord to reclaim portions of bog-land which skirted their respective holdings, without addition to the annual rent. The present owner this year, for the first time, demanded rent for the reclaimed land, which the tenants refused to pay.

Bad feeling will probably have arisen between landlord and tenants in this case, on a question which is capable of easy solution if there were a local tribunal with power of arbitrament, to which the dissatisfied party could appeal.

The tenants on a portion of a property recently sold came in a body to pay their rents to the new purchaser. He refused to receive it from them without an advance. The tenants refused to pay any increase, left the office, taking their money with them, and marched with a triumphal display through the town of Mohill.

Increase or Decrease of Improvements.

The tendency is towards an increase, but is confined to the estates of liberal landlords, in whom the tenants have faith for secure tenure.

On the whole, I think it fair to say that improvements are generally at a stand-still, owing to insecurity of tenure and the present unsettled state of the land question. Tenants are hopeful and expectant of some measure of security of tenure, and until a definite settlement of the law is arrived at they will not invest their capital or labour in the land.

I am quite sure that a great number of tenants would not accept leases at the present time, expecting better terms and more freedom from anticipated legislation than would be accorded by their landlords. Even when small tenants would be willing to accept of offered leases, the expense is a bar. Tenants are all obliged to pay the cost for the preparation of leases. The law now requires that leases should be prepared by a solicitor: the expense is about £5—a formidable sum to a poor man.

Progress is being made towards better cultivation of the land and improved husbandry generally.

As regards personal and household condition, the agent of a

large estate in the county of Roscommon makes the following remarks, which I consider worth quoting :—

"There has been an extraordinary improvement in the personal comfort and clothing of the peasantry within the last twenty years; but this desire after increased comforts has not extended in an equal degree to their dwellings, and domestic condition. Still, a great deal has been effected even there, especially when compared with their habitations some thirty or forty years ago. I think the great impediment to improvements in the tenants' cottages is the present enormous price of straw. I am convinced that vast numbers of tenants would gladly go to the expense of slating their houses, if they could get the loan of money on reasonable terms and to be repaid by annual instalments; and it appears to me far more desirable to improve the dwellings of the tenantry before the improvement of the land is commenced. Nothing would tend more to elevate the condition of the peasantry, and promote personal respect, than improvements in their dwellings. If such were effected, it should be connected with external tidiness about their residences. Several tenants on this estate have recently built slated houses at their own expense, and the landlord has given them proof of his approval by presents of money, or forgiveness of rents, to the amount of from £16 to £30, severally."

I quite agree with this gentleman as to the necessity and desirability of improvements in the dwellings and surroundings of the peasantry, but I feel that gratuities such as he speaks of will go a small way only to effect it.

Notices to Quit

Are still of frequent occurrence, but are much diminished within a few years past, and not so usually followed up as heretofore.

An extensive agent in the county of Galway, says—

"There is at present such a reign of terror, landlords are so frightened, they do not serve them now."

Another gentleman, whose means of information and credibility are reliable, writes :—

"I think many landlords, otherwise inclined, are afraid to evict."

From the statement of a Justice of the Peace, of the county of Galway, to which I have already referred, I quote :—

"The notice to quit has been of frequent occurrence, and I know one property, and no act was ever done on it without its agency being evoked. For example—If, to provide something for himself and his little family better than wages at 6*d.*, or at most 8*d.*, per day, he went to England to cut the harvest, the notice to quit greeted his return. If he exercised the franchise freely, he got a notice to quit. If he voted for an honest Poor Law guardian, the notice to quit was sent him. In a word, if he had a voice or opinion that did not harmonize with that of the landlord, the everlasting notice to quit was sure to grace his kitchen-table on his return from his daily toil."

One of the largest tenant-farmers in the county of Galway, writes :—

"Notices to quit are of very frequent occurrence, often for the attempted exercise of franchise, for voting for a Poor Law Guardian or candidate for places of any public trust—in fact, from various and multiform reasons, not always followed up, because the tenant-at-will does not disobey or disoblige his landlord."

The serving of notices to quit is attributable to many causes, amongst which may be mentioned the following:—

To keep complete control over the tenants and evict if desired; to consolidate holdings; to make new farms in the heart of the tenant's land, and remove them to the outskirts of bad land, bogs, &c.; to "stripe" or recast holdings; sometimes to settle disputes amongst tenants; to remove obnoxious tenants; to make room for the favourite of a landlord, agent, or bailiff; to oblige the tenants to sign special agreements containing stringent conditions.

I find that notices to quit are often served for what is called "misconduct" on the part of the tenants. The landlord or agent assumes to be the sole judge of what is misconduct, and naturally the interpretation of the word will vary according to the individual disposition, temper, &c., of the landlord or agent in each case.

I append a copy of an agreement that I have every reason to believe, every tenant on the estate of a large landed proprietor in the county of Leitrim has been obliged to sign.* Though the tenants are expected to observe all the stringent conditions, not one has been allowed a copy. I have been credibly informed that on this estate it is the practice, or at least had been the practice, to serve all the tenants once a year with "notice to quit," for the double purpose of more absolute control over them, and to facilitate ejectment proceedings when determined upon. I have been further informed that the tenants are strictly prohibited against giving any information whatever relating to the dealings of the owner with them.

The notice to quit, even when rarely used, on well managed estates, is always kept in reserve, the landlords considering that they have a clear right to use it against an offending tenant. The tenants know that the power to use it exists, and so it has a potential influence on the relations between them.

The returns of the tenure of agricultural holdings, furnished by the Clerks of unions, show that tenancies-at-will greatly preponderate (see page 48), and therefore the landlords' power of serving notices to quit on such a multitude of tenants is fraught with vital consequences. It is, I believe, the principal source of the prevailing insecurity and distrust, the chief bar to improvements, and the main cause of agitation and discontent.

Ulster Tenant-Right.

Tenant-right, according to the custom of Ulster, cannot be said to prevail. Tenants in this district have not the same recognised right to continuous occupancy as in Ulster. In some cases permission is given to outgoing tenants to sell the good-will of their holdings; in others it is connived at. In nearly all cases the practice is under the absolute control of the landlord, both as to the permission to sell and the choice of the incoming tenant. Very commonly the choice of the incoming tenant is limited to a

* See page 46.

person already holding land on the estate, and thus the practice is made to work as a mild and gradual process of consolidation. It also serves to insure the payment of arrears of rent. The operation is confined chiefly to the small class of holdings, and the money payment for the good-will is given rather for the right to occupy than for the value of the improvements.

Grazing farms are for the most part let from year to year and on pure contract terms.

A nobleman having an estate in the county of Leitrim says:—"I allow the Ulster tenant-right on my estates to the fullest extent."

On a good many large estates, both in Galway and Roscommon, the owners and agents allow the sale of tenants' good-will of holdings, but generally with the condition of being subject to consent and approval. So far as the qualified permission exists, it applies chiefly to the tenants-at-will.

A defined value can hardly be put on the good-will. It depends entirely on the character of the landlord, the quality of the land and amount of rent. Moreover, not having the force of a recognised custom, it has not a marketable value, as in Ulster.

On an island property in Galway Union it reaches 15 years, purchase on the rental. This land is set in bulk, not by the acre, and it is quite usual to get £50 for a £4 holding. This, however, I know to be an exceptionally high rate.

The agent to a large estate in the county of Roscommon, states that—

"£10 per plantation acre is an average price for a good holding. Recently a tenant emigrating sold his holding, containing about 49 acres plantation measure, with a suitable slated house, for £700."

It is very difficult to procure precise information on this head. All that I have received leads me to fix the average at 4 or 5 years' rent, or about £5 an acre.

Increase or Decrease of Tenant-right.

The prevailing practice being limited and ill defined, it cannot be said to gain ground as "a custom." The general tendency is towards more liberal dealing with an emigrating or insolvent tenant. Even when not allowed to dispose of the good-will of the holding, there is sometimes an understanding that the outgoing tenant shall receive something from an adjoining tenant, who is to go into possession, or from the landlord; this to some extent satisfies the tenant who leaves, and is often done to save the necessity of bringing the sheriff to take up possession.

As a rule, landlords have no intention to recognise a saleable occupation-right by their tenants, but the force of public opinion, and the necessity of yielding something for peace' sake, lead to concession.

An agent to large properties in the county of Galway, writes:—

"I think the custom is gaining ground, for the purpose of enlarging farms; landlords permit it.

Dowers, &c., &c.

Dowers are very generally charged by tenants-at-will on their temporary occupation. In most cases of small tenants it is done by some informal writing, often verbally in the presence of the clergyman or some friend. Such arrangements are incapable of legal enforcement, and therefore dependent on the good faith of the members of the family to each other. The land is usually left to the eldest son, a money payment to be made by him to the junior members of the family, when not provided for either by marriage or previous savings.

Generally speaking, the Irish peasantry are remarkable for forethought and thriftful economy in making provision for their families.

Landlords do not interfere in these arrangements, unless when likely to lead to subdivision of the land.

Manufacturing Industry.

Manufacturing industry, either on a large or small scale, does not prevail as a means of livelihood. Coarse linen and woollen cloths are generally made by the occupiers of land for their own household use. Pieces of flannel and woollen stockings may be seen offered for sale on market days.

There is some employment afforded in the town of Galway at manufactures—clog-making, making of sacks, &c.; but this does not affect the rural population.

Amongst the sources of industrial occupation in Galway, the first in importance is a factory established by a Lancashire company for making clog-soles, which gives employment to about 200 persons in the town; the weekly outlay in wages is about £150. Labourers get 1*s.* 4*d.* to 1*s.* 6*d.* a day, and the machine workers from 3*s.* 6*d.* for boys to 15*s.* for men per week. Those now employed have been trained in Galway, the hands at first brought over from Lancashire to instruct them having returned. This company also expends a good deal of money in the felling and carting of timber outside of the town in different localities.

A local company, formed for the manufacture of sacks, gives employment to about 50 persons, chiefly women, earning from 3*s.* to 7*s.* 6*d.*—on an average about 5*s.* a week. The sewing of the canvas into bags gives employment to about 24 other women who can earn from 3*s.* to 4*s.* per week, probably assisted by members of their respective families.

There is also a company for the manufacture of iodine and marine salts, affording employment to 34 persons; the greater number get 9*s.* a week, a few skilled hands receiving so much as 30*s.*

A brush factory gives employment to 60 persons, sometimes more, whose earnings range from 3*s.* to 9*s.* a week, according to ability.

Two persons are engaged at the manufacture of tobacco pipes; one employs 20 persons, and expends about £10 a week in wages; the other is not so extensive.

Besides these there are one distiller, one brewer, two soap and candle makers, one ironfounder, and six millers. These employ, in the aggregate, at least 100 persons.

In the Strokestown Union, county of Roscommon, there are a few scutch mills.

Labourers to England and Scotland.

From a great portion of the county of Roscommon, county of Mayo, and that portion of the county of Galway adjoining Roscommon and Mayo, the labourers and small holders of land resort in great numbers to England, principally for harvest-work; the great bulk go in June and July, and return in September.

I have obtained a return of the number of tickets issued last year to harvest men at the principal railway stations in my district, viz.:—

County of Roscommon,	Roscommon,	2,171
	Castlerea,	3,708
	Boyle,	1,464
County of Leitrim,	Carrick-on-Shannon,	1,084
	Dromod,	164
County of Galway,	Galway,	509
	Tuam,	2,788
	Ballinasloe,	750
	Athenry,	287

Those who leave poor families behind them remit money by Post-Office orders as soon as they earn it. They usually bring home from £4 to £6 per man—sometimes more.

The migration to Scotland for harvest-work is not large from my district. Some go with the expectation of procuring permanent employment, and if successful remain there. Those who go to England for manufacturing employment, generally purpose domiciling there.

In conclusion, I have to express my warm acknowledgment of the readiness with which so many landowners, agents, occupiers, and others have furnished replies to the queries addressed to them. The answers received naturally varied very much in style and substance, and, in many cases, represented individual opinion rather than general facts. However, to the best of my ability, I have endeavoured to extract what I considered of value as illustrating the general practice, and I hope that the information contained in this Report may be of some use in throwing light on the relations existing between landlords and tenants in my district, the satisfactory adjustment of which is a matter of so much importance to all classes.

I have the honour to remain,
Gentlemen,
Your obedient servant,
T. BRODIE,
P. L. Inspector.

To the Poor Law Commissioners,
Custom House, Dublin.

MEMORANDUM of AGREEMENT made and entered into this day of , 18 , between A. B., of , in the county of owner of the farm, lands, tenements, and hereditaments hereinafter mentioned, of the one part; and the intended tenant of the same farm, lands, tenements, and hereditaments, of the other part.

The said A. B. agreed to let to the said , and the said hereby agrees to take of the said A. B. all that messuage or tenement, with barns, stables, outhouses, yards, gardens, and appurtenances thereto belonging; and also all those several closes, pieces or parcels of land or ground situate, lying, and being at , in the barony of , and county of , containing acres, roods, and perches, statute measure, or thereabouts, be the same more or less, commencing from the day of , 18 , as tenant from year to year, determinable by six months' notice to quit, ending on any or either of the gale days hereinafter mentioned.

Reserving to the said A. B., his heirs and assigns, all timber and other trees, and underwood, moors, bogs, marshes, seaweed, waters, watercourses, and all mines and minerals, stone, sand, gravel and clay; and also reserving to the said A. B., his heirs and assigns, all game, hares, rabbits, wild fowl and fish, and the exclusive right to the said A. B., his heirs and assigns, his and their nominees, their servants and followers, of hunting, hawking, shooting and fishing on the said lands and premises, and of carrying away the game and fish. The said A. B. and his heirs and assigns shall have power to enter upon said lands at any time for the purpose of viewing and surveying said lands and premises, searching for, and with workmen, horses, and carrriages, removing minerals and other matters herein excepted; and also to make roads, drains, and watercourses as the said A. B., his heirs or assigns shall think fit; and for all other reasonable purposes whatsoever, but making all reasonable compensation for actual loss or injury to crop or meadow occasioned by any such entry.

And the said doth hereby agree to pay for the same the yearly rent of , payable half-yearly, in equal sums, on the day of , and day of , in every year, over and above all taxes, poor rate, and other charges imposed or to be imposed thereon; and also to pay such increased rent as is hereinafter provided—the first half-years' rent to be due and payable on the day of , and the last half-years' rent to be paid and payable in advance—and the same to be recoverable in the same manner as rent and arrears are recoverable in other cases between landlord and tenant.

And it is also agreed that the said shall not, without permission in writing from the said A. B., or his heirs or assigns make any new roads, fences, or drains on the said land, or build or alter any house or building thereon, or use or allow to be used any house or building thereon as a dwelling-house, save that in which he shall himself reside; or that he will not grow two white or grain crops in succession on any part of the said lands; or that he will not, in any one year, have in tillage more than acres, or dig, plough, or break up any of the permanent grass fields upon the said farm at the time of his obtaining possession of said farm, or afterwards laid down by him; or that he will not, in any one year, till with a potato crop any greater quantity of land than that which shall be under other green crops, or till with a potato crop any land which shall have been in grass or lea during the previous year; or sell or carry off the said land any hay, straw, manure, turnips, or mangold wurtzel; and that he shall not assign, sublet, let in conacre or for a crop, or subdivide for grazing, or part with the possession of the said land or any part thereof.

And it is also agreed that the said shall keep up during his tenancy, and at the termination of his tenancy shall leave and yield up in good and tenantable condition all buildings, fences, gates, and water-courses which are now or shall be hereafter, during the continuance of his tenancy on the said lands; and shall dig up or cut down all thistles, docks, and other weeds before they go to seed, or at any time when desired to do so by the said A. B., his heirs or assigns, or their agent or other person duly authorized for the time being.

And the said shall assist to the utmost of his power the said A. B., his heirs or assigns, in prosecuting trespassers, and permit or suffer the said A. B., his heirs or assigns to make use of his name in any proceeding in prosecuting trespassers on said lands, and that the same shall be at the cost of the said A. B.

And that the said will not at any time take out or suffer to be taken out upon the said premises any dog or dogs, or destroy or injure, or suffer to be destroyed or injured any game, or the eggs or young of any game, hares, or rabbits, or wild fowl upon the said premises, but will preserve and protect the same.

And it is further agreed that on breach or non-performance of any of the aforesaid agreements and provisions entered into on the part of the said he, the said shall pay to the said A. B., his heirs or assigns, the further yearly rent of pounds shillings and pence, the same to be recovered and recoverable in like manner as the rent hereby reserved, and to be deemed as liquidated damages between the parties, and not in the nature of a penalty.

The said A. B. to have the usual powers of distress and re-entry as between landlord and tenant in case of non-payment of rent.

And if the said shall commit any act of bankruptcy, insolvency, or be imprisoned by any civil or criminal process for a term exceeding fourteen days, then this tenancy shall cease, and the said A. B. or his heirs shall have power to enter into and upon, and re-possess the said lands in the same manner as if the tenancy had expired by a notice to quit duly served, and possession duly demanded thereunder.

And it is further agreed, that nothing herein contained shall be deemed or taken to entitle the said .to any payment or compensation for any farm or other building for agriculture or otherwise, or for any fixture or improvement of any description whatsoever, done or constructed in, to, or upon the premises held under this agreement, except and unless the building, erecting, doing, or making of such work or improvements shall have been previously stipulated for and specified by some article or agreement in writing, signed by the said A. B. and the said .

And lastly, it is also agreed that the payment of rent or passing a receipt for same shall not be taken or construed into a waiver of any of the clauses and agreements herein contained.

RETURN showing the Number of AGRICULTURAL HOLDINGS in Dr BRODIE'S District, as also the Tenure by which they are respectively held.

NAME OF UNION.	Valuation.			Population in 1861.	Tenancy at Will.	Leases.	Holdings in Occupation of Proprietors in Fee.	TOTAL.
	£	s.	d.					
Galway, . . .	65,638	3	0	50,821	5,127	529	267	5,923
Ballinasloe, . .	78,763	0	0	28,222	3,933	413	218	4,564
Mountbellew, . .	40,438	6	0	19,936	2,866	396	135	3,397
Gort, . . .	43.188	6	0	20,501	3,453	405	165	4,023
Glennamaddy, .	31,876	9	0	22,469	3,751	346	132	4,229
Tuam, . . .	75,658	5	0	44,440	6,265	181	89	6,535
Loughrea, . .	75,453	0	0	29,139	4,679	592	349	5,620
Portumna, . .	35,522	0	0	14,939	2,086	467	88	2,641
Total, . .	446,537	9	0	230,467	32,160	3,329	1,443	36,932
Roscommon, . .	64,311	9	0	26,504	3,973	241	30	4,244
Strokestown, . .	50,762	4	0	26,395	3,032	690	109	3,831
Castlerea, . .	71,716	11	0	46,783	6,914	610	143	7,667
Boyle, . . .	72,643	4	0	47,758	5,545	814	169	6,528
Total, . .	259,433	8	0	147,440	19,464	2,355	451	22,270
Carrick-on-Shannon,	47,447	5	0	31,677	4,111	728	103	4,942
Mohill, . . .	39,170	15	0	30,191	4,940	281	117	5,338
Total, . .	86,618	0	0	61,868	9,051	1,009	220	10,280
Bawnboy, . .	39,637	17	0	26,808	3,632	681	102	4,415
Total, . .	39,637	17	0	26,808	3,632	681	102	4,415
Parsonstown, . .	102,061	17	0	39,350	5,321	443	208	5,972
Total, . .	102,061	17	0	39,350	5,321	443	208	5,972
GROSS TOTAL, .	934,288	11	0	505,933	69,628	7,817	2,424	79,869

RETURN showing the Number of NOTICES of EVICTION that were served upon the CLERKS of the UNIONS in my District, during the years 1868 and 1869 respectively :—

	1868.	1869.		1868.	1869.
Galway, . . .	5	4	Mohill, . . .	11	–
Tuam, ...	4	6	Roscommon, . .	–	–
Ballinasloe, . . .	–	–	Castlerea, . . .	11	5
Gort, ...	6	5	Boyle, . . .	25	10
Portumna, . . .	2	2	Strokestown, . .	–	–
Loughrea, . . .	11	5	Bawnboy, . . .	14	1
Mountbellew, . .	–	–	Parsonstown, . .	13	7
Glennamaddy, . .	–	3	Carrick-on-Shannon, .	9	8

V.—REPORT FROM DR. ROUGHAN.

DISTRICT comprising parts of the COUNTIES of GALWAY, LEITRIM, MAYO, ROSCOMMOM, and SLIGO.

Galway, January 15, 1870.

GENTLEMEN,—I have the honour to acknowledge the receipt of your letter of the 2nd ultimo, No. 30,290, '69, transmitting a copy of a letter which you had received from the Chief Secretary of His Excellency the Lord Lieutenant, communicating the desire of His Excellency to obtain, through the Poor Law Inspectors, in a brief space of time, information on various points relative to the position of the occupiers of land in Ireland.

In reply, I have to say that every exertion in my power has been used to obtain reliable information on the existing relations between landlords and tenants in my unions, and I now beg to transmit the annexed report, which is founded on information derived from landlords and their agents, occupying tenants, clergymen of both denominations, the constabulary, medical officers of dispensary districts, clerks of poor law unions, poor-rate collectors, relieving officers, my own knowledge of the district, and personal inquiry made all through my district within the last six weeks.

I have the honour to be,
Gentlemen,
Your obedient servant,
GEORGE F. ROUGHAN, P.L.I.

COUNTY OF GALWAY.

OUGHTERARD AND CLIFDEN UNIONS.

1. These unions are comprised in the district of country known as Iar Connaught, Connemara, and Joyce country, and extend over an area of 365,710 statute acres. The larger portion of Connemara consists of wild mountain and bog, set in extensive tracts, for grazing purposes, to tenants who reside elsewhere; as a consequence, few houses save the huts of herds are to be met in the interior of the county, where there is no attempt at drainage, the reclamation of land, planting, or fencing. The sea-board of these unions stretches from Killery Harbour, on the confines of Mayo, on the north, to Cushla Bay, adjoining the

Galway Union, on the south, indented by numerous bays and inlets, on the shores of which is an abundant supply of deep sea sea-weed, and what is commonly known as sea-rack; the former affords much facility for the manufacture of kelp, and the latter for the cultivation of the soil. The great bulk of the population of the Clifden Union, and of the southern portion of the Oughterard Union, reside along the sea-shore.

Farm-houses.

2. Their habitations are of the humblest description, rudely built of stone without mortar, thatched with sedge, and neither plastered nor limewashed on the exterior. Such as they are, they were built by the tenants themselves, or by their predecessors. Of latter years some houses have been erected by landlords, but chiefly for tenants holding under lease, and 5 per cent. has been charged on the outlay.

Drainage.

3. Drainage works to a considerable extent have been carried on by some of the proprietors, particularly by a London corporate body who own in fee a great portion of those unions.* Those works have been executed chiefly in the electoral divisions of Knockboy, Roundstone, and Cleggan, in Clifden Union, and a charge of 5 per cent. has been placed on the land in addition to the former rental. The drainage done by the tenants is limited to that necessary to carry off the surface water, and they insist, as a rule, that any other description of drainage on the Connemara land is useless, inasmuch as the water cannot percolate through the soil, which is of a retentive and non-porous character.

Reclamation of land.

4. The tenants reclaim a great portion of the bog and mountain in the vicinity of their cabins; this reclamation they have been induced to carry on by the experience of past years, which has taught them that the potato crop in the boggy and mountainy land is more likely to escape the blight than in land long devoted to husbandry.

Fences and mearings.

5. As for the fences and mearings they are universally made by the tenants, and are, as might be expected, of the worst possible description, and afford no sufficient protection against trespass; the consequence of which is endless disputes and litigation. The proprietors in some few instances have built mearings and bounds on farms which have been striped. Examples there are of strangers settling in this part of the county, obtaining leases for ninety-nine years and upwards, who have built houses and offices, made mearings, and executed other improvements, and finally have brought the land into a high state of cultivation; it is to be noted, however, that the landlords in most of those cases have advanced money to the tenant, charging 5 per cent. interest on the outlay.

Planting of trees.

The planting of trees is solely confined to the residences of proprietors. Some proprietors have expended large sums of money in the formation of roads leading to, and intersecting their estates.

Tenants' security for improvements.

6. There is no security whatever, as far as I could ascertain, with two exceptions, that either by custom or practice, by guarantee or otherwise, the tenant shall receive a fair proportion

* Since the above was written I have been informed by the agent of the London Corporation that a sum of £36,543 has been expended on drainage, road-making, and other works, from 1856 to 1868.

for the improvements effected by him, in the event of eviction or surrender; or, that he will be allowed the undisturbed enjoyment of the effects of his improvements for a certain definite period. The exceptions to which I have alluded are—first, that of a wealthy English gentleman who some years since purchased a property in the Renvyle electoral division in Clifden Union, and he, in reply to my query on this point states:—"Tenants wishing to surrender get from me from one to three years' rent, according to the improvements they have effected;" the second is that of a proprietor in the electoral division of Errislannon, also an Englishman, who makes it a rule to enter into an arrangement with his tenants, and fixes the amount of compensation they are to receive for improvements effected by them, in case of surrender or eviction. I had almost omitted to mention another instance, in the electoral division of Wormhole in the Oughterard Union, where a proprietor allows his tenants 5 per cent. per annum for all improvements effected by them.

Increase of rents consequent on improvements.

7. Beyond all doubt the great drawback to the tenants executing improvements on their holdings is the twofold apprehension of a subsequent rise in the rent, and of eviction. What may appear to be improvements in the tenant's eyes may be worthless in his landlord's. A cowshed or a pigsty may be, and doubtless is, of advantage to the one, and a source of expense to the other, when removing it on the resetting the farm to some strange settler after the old tenant has been ejected. It is not then with this class of cases I am now dealing, but with cases of permanent improvement to the freehold.

Many acres have been converted from wild heathy moor into productive arable land by the persevering energy of those humble tenants, who, while they have reaped to some extent the fruit of their own toil, have at the same time added to the marketable value of the estate. Few instances occur, wherever those works have been executed, that have not been followed by an increase of rent; and whether that increase is due to the improved condition of the land, or to an alteration in the value of the currency, or to both, one thing is beyond all doubt, there has been a progressive rise in the rents within the past few years; in some instances they have been doubled, in others trebled.

The instances in which tenants have lost the value of their improvements by reason of a disproportionate increase of rents are very numerous; when new purchasers come in, they, as a general rule, stripe, reset the lands, and raise the rents to such an extent, as to deprive the tenants altogether of the value of their labour. Ask the peasant why he, who lives under a good landlord, is not ashamed to dwell under the same roof with his cattle? The invariable answer is—"How do I know how long my landlord will be left over me, perhaps in a year or two the estate may be sold to one who will surely raise my rent, or maybe put me out altogether." Perhaps the poor man's apprehensions are not without foundation, when it is remembered, that within the last seventeen or eighteen years five-sixths of the properties in those unions have changed owners. The Ballinahinch estates, the ter-

Tenants' insecurity.

ritory of the Martins, have been purchased by a wealthy London corporation. The rents at the time of the purchase, as I am informed, amounted to £8,000 or £9,000 a year. One-third of those estates so purchased, or more, have since been resold to different parties, and yet the tenants on the remaining unsold portion now pay a rental of some thousands a year in excess of the rent paid in the first year after the purchase, on the entire estate. Nevertheless, it appears that the tenants on the lots which were sold by this corporation have suffered severely by the change of ownership, inasmuch as numbers of them have been evicted, and the rents of those remaining have, in some instances, been raised from 40 to 100 per cent. The corporate body of whom I have been speaking have caused the remaining portions of their estates in those unions to be parcelled out into lots, and each lot is like a parcel of merchandise, ticketed with its price, and whosoever pays that price can become its purchaser.

Notices to quit and agreements.

8. I have now to approach another subject—that of notices to quit, which, up to the last year, have been of very frequent occurrence. In some instances the necessity of those legal documents has been superseded by the adoption of a more rapid method of ridding the estates of the tenants. That method, which was thus adopted on the largest estates within those unions, was to compel the tenants to enter into and sign a stamped and written agreement when they were paying their November rents, to surrender their lands, if demanded, on the 1st of the following November.

9. Notices to quit are still not of unfrequent occurrence. They have been indiscriminately served this year on the property of a noble earl in the electoral divisions of Cong and Cur, in the Oughterard Union, not for non-payment of rent, nor for the infringement of the eccentric rules of the estate, but, as I have been informed, in anticipation of future legislation on the relation of landlord and tenant. Some three years ago similar notices to quit were showered amongst those tenants, and were followed by a general increase of rent. Perhaps a statement made by one of the tenants in his own simple language may be here profitably introduced:—"The tenants on ——— estate are often served with notices to quit. The lands are set high. I was served with notice to quit three months ago, and so was my nephew. We have no courage to do anything, even to sow our crops. We have all our rents paid, except last November rent, and we are ready and willing to pay it when called upon." A large number of notices to quit have been served in the same district by a middleman who holds property under the Provost of Trinity College.

Ulster tenant-right—does the custom prevail?

10. The question of tenant-right next presents itself for consideration. I have inquired diligently into the matter, and I am of opinion that while, as a general rule, it may be said not to exist, still the exceptions are so many and so various, that I think I would not be justified in passing by this subject without bringing under your notice the fact that, in many places and on many estates, a status which, in some shape or other, resembles the Ulster tenant-right exists. It is found in a modified form in the

Oughterard Union, on the property of a magistrate and deputy lieutenant, owner of extensive and ancient estates, who replies thus to my query on the subject—"I have always permitted an outgoing tenant to sell his right, leaving it to the contracting parties to settle the amount between them. I never interfere, except in the case of a man of bad character being offered as a successor." There are similar traces of it to be found in the electoral divisions of Bunowen, Clifden, and Renvyle, in the Clifden Union. In reply to my query on this subject, the agent of the extensive estates possessed by the London corporate body, already alluded to, states, "No; unless to a very small extent." The custom is said also to prevail on the estates of Trinity College.

Dowers, or portions for younger children.

11. Tenants-at-will do not generally charge their temporary occupation with dowers or portions for younger children, but not unfrequently they devise, by word of mouth, their holding and stock to a member of their family.

Manufacturing industry.

12. Some manufacturing industry prevails in those unions. Connemara stockings are extensively made. A small factory for the employment of orphans is conducted by a religious community in Clifden, where linseys and some other materials for women's apparel are woven. Frieze, flannel, blankets, and coarse linen are manufactured by handloom weavers, two or three of whom are to be found in each electoral division.

13. A most remunerative means of employment has lately sprung up on the sea-shores; I allude to the manufacture of kelp, from which iodine, bromine, and several salts used in pharmacy and the arts are extracted. Formerly, sea-rack, which grows and is found on the immediate shore, was used; however, being found not to be rich in those substances was abandoned to the agriculturists, who apply it to the manuring of their lands; the deep sea sea-weed is found in great abundance about a mile or two from the shore, growing at considerable depths in the ocean, and from this article the kelp is now made.

The labouring population resort to England and Scotland in considerable numbers, leaving their own country in the month of May and returning in the commencement of autumn, bringing with them sums averaging four pounds per man.

County of Mayo.

Farm-houses.

14. The unions I shall next proceed to deal with are those of Ballina, Ballinrobe, Belmullet, Castlebar, Claremorris, Killala, Newport, Swineford, and Westport. The houses in those districts present a marked and favourable contrast to those I have had occasion to speak of in my observations on the Clifden and Oughterard Unions. From times of remote antiquity the population dwell in houses clustered together, called villages, round which the land was parcelled in the manner now known as the rundale tenure system, which it has been the policy of some modern landlords to dissolve into separate farms. The houses of the villagers are, on its dissolution, levelled to the ground, and new ones built in the most convenient and generally the most central part of the

new holding allotted to each tenant, on the redistribution of land. This change, while it unhinges a family, is said in the end to be beneficial; be this as it may, the cottages are built by the people themselves. In some cases forest timber for the roof, window-frames, and doors has been supplied by the landlords, who have also in a few instances contributed three or four pounds toward the completion of the house. In exceptional instances, where landlords build houses for their tenants, they charge 5 per cent. per annum on the outlay. Slated houses are to be met with here and there through the county. These, it will be found, are usually built by some wealthy or some noble proprietor on farms which have been consolidated and let to English or Scotch settlers. I take it to be the rule that landlords do not build for the peasant farmers, their houses. There is one exception at least, in the Claremorris Union, where a landlord has of late thought fit to, and in fact did, remove from their farms, and much contrary to their will, some five or six and twenty families to another and more remote portion of his estate, where he built for them houses well put together of stone and mortar, airy, spacious, and healthy.

Drainage Works.

15. Drainage—I speak of those works done on estates by landlord and by tenant, in contradistinction to those executed under the Board of Works,—the proprietors now confine their operations to drainage of lands in their own possession and to farms which have been consolidated and set to new settlers. Drainage works are never carried on on any extensive scale by a tenant-farmer, in any one year; patch by patch, he drains and reclaims year after year. A whole mountain side in the neighbourhood of Ballycastle, in the Killala Union, on the northern sea-board of this county, has been converted from a wet moss into wholesome pasture and arable land, by the hand-labour of the tenant-farmers who lived at its base; and so it is in other parts of Mayo. In the Belmullet Union, in the island of Achill, in the Newport Union, how many acres have been brought into cultivation? In a word, wherever the peasant's farm edges on the bog or mountain, he is certain to reclaim bit by bit, rood by rood, until at last the marketable value of the estate is so enhanced by his labour that, in many instances, the land which at one time was not worth six-pence an acre, is now worth ten shillings.

Reclamation.

Fencing.

16. The fencing on the tenants' farms was constructed by themselves or their predecessors; where striping has taken place the landlords generally build the meares and bounds, but the tenants make the cross fences.

Planting.

17. Planting by tenant farmers is unknown; they have not, they say, any inducement to do so.

Tenants' security for improvements.

18. The tenant farmers have no security by guarantee that they shall receive the value of their improvements on leaving their farms, but on some estates there is an implied understanding that they shall receive compensation for any permanent improvement effected on their holdings. However, a feeling of insecurity haunts them, that they—though living under landlords to whom, as a class, and to whose families they have been endeared by long acts of kindness—may one day be handed over to a new purchaser, who

may raise their rents without taking into consideration the value of their improvements.

Loss of the value of improvements by tenants—increase of rent.

19. The question, whether the tenant farmer has lost the value of his improvements by reason of a disproportionate increase of rent, is one, the solution of which it is difficult to arrive at. That an increase of rent has, within those latter years, taken place is certain. As a rule, I have found that that class of landlords, who may be denominated as the ancient proprietors, do not for many years after improvements, raise their rents. On some estates a valuation does not take place for twenty years; on others for ten; and others for seven; and I have met with cases where the rent was not raised from time immemorial. The new landlords as a rule, but by no means a general one, cause a valuation to be made on getting into possession, and it concerns them but little to inquire wherefore, or how the estate has been improved, provided they receive so much per cent. on their capital. Since the establishment of the Incumbered Estates Court, tenants innumerable have, by a disproportionate increase of rent, lost, in a great degree, the value of their improvements.

Evictions.

20. Tenant-farmers who have lost the value of substantial improvements by reason of eviction are numerous; tenant-farmers who have lost the value of their labour, from the same cause, may be counted by the hundred, as instances:—many tenants in the electoral division of Strade, in the Castlebar Union, who had built houses and offices, made other substantial improvements, had paid their rent regularly, and yet were evicted without receiving any compensation whatever. At the Ballina Quarter Sessions just closed, several decrees on ejectment were obtained; the plaintiff in those actions had, for thirteen years past, been in the habit of regularly, once a year, serving notice to quit on every tenant on her estate. One of those tenants who took defence to the action, built a house upon this land, upon which his family had lived for generations; he had paid his rent up to the 1st of November, 1869; he had made the garden, constructed trench drains through the land, in a word he had laid out a sum of £150 in improving a small 19 acre farm; a decree has been obtained against him, and he has lost the value of his outlay; this case has acquired notoriety (while others have passed unnoticed), owing to the fact that an attempt was made on the life of this (landlady) plaintiff at her residence, near Ballycastle, some short time previous to the sessions, which happily proved unsuccessful. In the southern portion of the Ballinrobe Union, two cases occurred in which the tenants lost altogether, through eviction, the value of their improvements. The first of these cases occurred in the year 1866; the tenant had his rent paid up to the last gale day, he had been ten years in the holding, and had expended a considerable capital in improving the lands; nevertheless, without any assignable cause, a decree of ejectment was had against him, and he was put out of his farm; and instead of receiving compensation, to my own knowledge legal proceedings were taken against him for the half year's rent, which had accrued and became due on the gale day of his eviction. The second case occurred on the same property in 1868; the tenant

tendered his rent up to the day, still he was evicted by a process in ejectment from a farm on which £150 had been expended in the building of a comfortable dwelling-house and offices, and on which his forefathers had resided for centuries.

Increase or decrease of improvements.

22. Improvements either on the part of the tenant or landlord, are now at a stand still.

Notices to quit.

23. Notices to quit are not so numerous as they have been in years past, yet they are of frequent occurrence. The same noble proprietor, referred to in paragraph 9, has served no less than 28 tenants with those documents in the Ballinrobe Union, 26 notices to quit have been served on tenants in the Castlebar Union, a large number have been issued in Ballina Union, and some in Westport Union, and also in the remote union of Belmullet. It is difficult to define the causes to which the service of those notices may be attributable, but I will, as far as I am able, set down in general terms some of the many which induce landlords and agents to disturb the minds of their tenants and their families with those harassing instruments. (1.) As a means of putting, in mercy to the tenants themselves, a stop to quarrelling amongst each other. (2.) When a landlord wishes to obtain possession of his land. (3.) When he wishes to stripe the holdings. (4.) As a precursor to the raising of rent. (5.) To prevent subdivision. (6.) For enforcing those local codes known as "the rules of the estate." (7.) In anticipation of future legislation on the land laws. One remarkable case came under my observation in the Claremorris Union, which does not fall within the above category, viz., that of a landlord annually serving notices to quit on his tenants for the purpose of preventing them from going to England or Scotland to reap the harvest. In the great majority of cases notices to quit are not followed up to a decree in ejectment, simply because the tenant, knowing that the landlord is all powerful, yields to his demand; this view is clearly illustrated by a case that occurred since the 1st of last November, in the Belmullet Union, it is this: a landlord who lately purchased two townlands, on one of which resided twelve families, all of whom he had served in May, 1869, with notices to quit; on inquiring from him had he followed up those notices, he replied not, when on being further interrogated as to why he had not done so, he said there was no necessity for his doing it as they had given up possession, and were now in their houses as caretakers. Before closing my observations on notices to quit, I have to remark that a system to which I have already alluded in paragraph 8, has lately crept into this county, that of getting yearly tenants to sign a written agreement, binding themselves to give up possession without notice on the first of the following November, and authorizing the landlord to distrain in August for rent which, under the ordinary tenancy of the country he would not be legally entitled to do until 21 days after the 1st of November. A copy of this agreement will be found appended.

Agreement to give up possession.

Ulster Tenant-right in Westport Union.

24. The custom of tenants selling their right of occupancy, or, as it is more familiarly called in this county, the good-will of their holdings, while prevailing to a greater or lesser extent in

many districts, is utterly unknown in others; in Westport Union it is said to exist on some small estates. One of my informants says that he paid £30 to an outgoing tenant, and that the agent of the property offered no opposition. In the majority of the estates in the same union, the practice is denied; one of the principal proprietors, utterly ignoring the custom, evicted, within the last few years, several solvent tenants, whose rents were paid up to the last gale day, consolidated their farms, setting a portion of the lands to two new tenants, and keeping the remaining portion in his own possession; he handed to those whom he had thrown out from their houses, on one townland, a year's rent, on another a half year's rent, and I have not been able to ascertain the amount of compensation paid to the remainder.

Ulster Tenant-right in Ballinrobe Union.

25. The Ulster tenant-right custom prevails in a very modified form in Ballinrobe Union. "Twenty years' purchase," writes a magistrate owning property in Hollymont Electoral Division, "I have seen given for a small farm; the custom is gaining ground, and I think all landlords would be glad to see the Ulster tenant-right on their estates." Another landed proprietor and a magistrate in the same electoral division writes—"I have heard of it. The custom exists; it is very hard to prevent it, but it is not allowed on my estate." A deputy lieutenant and a magistrate residing in the same union says that "the tenant-right exists on my estate." Another magistrate, who is a barrister, writes—"The custom exists on my property in the electoral division of Shrule, in Ballinrobe Union, and also on my property in the Tuam Union, subject to my right of selection amongst the bidders. In cases of small holders under £8 a year, I insist that they must sell to another tenant on the estate; and if no tenant appeared, I would give, as I have given before, from £5 to £7 per Irish acre. Six or seven instances of this have occurred within the last few years." It is well known that two noble proprietors permit a modified form of the Ulster tenant-right custom on their very extensive estates.

Ulster Tenant-right in Castlebar Union.

26. In Castlebar Union, in the electoral division of Ballivoy, a tenant-farmer informed me that he had disposed of his good-will of a small farm, for £14; I also ascertained that the practice has long been recognised on the property of one of the County Members, and that a widow who held under him 10 acres of land, as tenant-at-will, had sold her good-will for £40. I shall just mention the case of a Protestant clergyman who possesses estates of considerable value in the Ballyhean Electoral Division, and who resides in the south of Ireland, and writes in reply to my query on this subject:—"Yes; *ex gratia,* a widow about to emigrate last spring to America, where her son lives, asked and got my permission to sell a small farm of about 30 statute acres. I could have got from an eligible tenant £50, who would have paid the widow £100. I declined the offer, and she sold this small holding to one of my tenants for £140. She did not execute any expensive improvements. All my tenants are tenants-at-will, simply because they won't take out leases under me or my family."

An agent over extensive estates in different parts of the county writes thus, in reply to my inquiries on this subject:—"Tenant-right prevails on my property, and on all the properties on which I am agent. I have known 12 years' rent to be refused by a tenant of mine upon her holding."

Ulster Tenant-right in Claremorris Union.

27. In the Claremorris Union, on a nobleman's property, one of the most extensive in the county, the custom prevails, with some modifications. His agent thus replies, "If a tenant leaves, or is for any cause, turned out (which very seldom happens, indeed), a valuation is made of his improvements, which are paid for, and a further sum is sometimes paid, but is limited never to exceed three years' rent. This nobleman also is the owner of a great portion of the Swineford Union, where I have ascertained from reliable sources that the price of the good-will cannot, by the rules of the estate, exceed four years' rent on the rental, the landlord being apprehensive that any further price might absorb the tenants' capital, and leave him without sufficient means of stocking and cultivating the land.

Ulster Tenant-right in Ballina Union.

28. BALLINA.—I believe it is the general practice in this union that the tenants are allowed to sell their good-will to the incoming tenants if approved by the landlord, but there are instances, and not a few, where landlords refuse to recognise the practice. I am informed by a landlord, the owner of estates in the electoral divisions of Ballysakeery, Fortland, and Letterbrick, that in every instance the outgoing tenant receives the customary value of his interest in the farm, generally about three or four years' rent, that the custom is generally confined to tenants-at-will, and that the value is defined at four years' rent. Another landlord having large estates in the electoral divisions of Carramore, Mount Falcon, Sraheen, and Attymas, writes in reply to my query, "I believe it does, surreptitiously. It is difficult to separate the two (meaning good-will and compensation for improvements); it is confined to tenants-at-will. The value set upon it, I should say, is calculated at five or six years' rent—say £5 per acre (Irish)." Another landlord having estates in Mount Falcon and other divisions, writes, "A customary allowance for good-will is generally paid to outgoing tenants; that it extends to tenants holding at will, and also to leaseholding tenants; that three years' rental is the average price given." I have been informed by the agent that the good-will of a farm of land on the estate which he manages was sold to an incoming tenant against the wish of the landlord; the rent was £14 per annum, and the price paid was £46.

Ulster Tenant-right in Killala Union.

29. KILLALA Union.—No traces of the Ulster tenant-right can be found in this small union.

Ulster Tenant-right in Newport Union.

30. NEWPORT Union.—As far as I can ascertain the custom does exist, but to a limited extent.

Ulster Tenant-right in Belmullet Union.

31. BELMULLET Union.—Traces of this custom are to be found in this remote union, but not to so great an extent or so well defined or known as in the unions I have spoken of.

Dowers.

32. Tenants holding from year to year sometimes devise their farms both by written and verbal wills. The custom, as well as I can make out, being conterminous with the districts where the

tenants dispose of the good-will of their holdings, sometimes charging the land with portions for younger children. The usual method of testators dealing with their little properties is this:—The tenant devises the holding to his wife for her life, with remainder to the eldest son. In some cases he gives her power to appoint the most worthy of her sons, without any reference to primogeniture.

Manufacturing industry.

33. I have made inquiries all through the county, and have ascertained that, in all the electoral divisions, handloom weaving is uniformly to be found. The articles manufactured are frieze, flannel, blankets, and linen, all of which are disposed of at the county markets, and purchased by the peasantry for their own use.

Harvest labourers.

34. The labouring population, strictly speaking, or what was known twenty years ago by that name, have very much diminished, except in or about towns. The occupiers of small farms and their sons, and, in some instances, their daughters go to England and Scotland for the harvest, and return in time to save their own, bringing with them from £5 to £8 each. I should say from 5,000 to 7,000 go away from this county.

County of Sligo.

Farm-houses.

35. This county comprehends within its ambit three poor law unions, namely:—Sligo, Tobercurry, and Dromore West. The present habitations of the tenant-farmers in those unions are generally of a good description, built of stone and mortar, thatched with straw, plastered and limewashed on the exterior, and comfortably furnished inside. Those houses were formerly constructed in a rude manner by the ancestors of the present tenants who held under leases and subdivided the land, "notwithstanding covenants to the contrary," to such an extent that, at the expiration of the lease, instead of the one original tenant thirty or forty families were usually found in possession, and were generally, through the kindness of the landlord, recognised in the rental. Under this regime matters passed on smoothly until the memorable famine of 1846 occurred, and which, lasting for several successive years, decimated those over-populated townlands, and caused a general disruption of social ties: subsequently emigration set in, and so, by degrees the holdings from being many were reduced to few, the occupants of which reconstructed their present houses, receiving, in many instances, from their landlords, assistance in the way of forest timber for roofing, window-frames, and doors, and, in some rare instances, a small contribution in money. Slated houses are rarely to be met with, and when they are, on inquiry it is found that they have been erected on farms that have been consolidated, and let on lease. They are generally built by the landlord, who charges the tenant interest sufficient to cover the outlay within a certain number of years. Fences, like the houses, may be said to have been constructed by the present tenants or their predecessors. When in modern times the farm is striped, the landlord generally contributes half the

cost and supplies quicks; in other instances the landlord builds the mearings, and the tenant builds the cross walls.

Drainage.

36. Drainage, where it has been carried on on an extensive scale, has been usually done by the landlords through the medium of the Board of Works, and when this affects the farm of a tenant he is usually, as might be expected, charged five per cent. on the outlay.

Reclamation of land.

37. Much of the boggy and barren land which stretches along the southern shores of Donegal bay, have from time to time been brought into reclamation by the tenants. The same remarks apply to the mountainy parts of the interior of the county, and to some parts of the land bordering on the lakes of Lough Gill, Lough Arrow, and Lough Farra.

No planting worth mentioning has been done by tenant-farmers; it has been and is confined to the proprietors' demesnes.

Tenants' security for improvements.

38. The tenants in this county, while they have no exact guarantee that they shall receive compensation for their improvements in the event of surrender, or that they will be allowed the undisturbed enjoyment of the effects of their improvements for a certain definite period, seem to me to have the most implicit reliance on the honour of their landlords. To go through the many instances in which tenants have related the many acts of paternal kindness they have experienced from their landlords, is foreign to my purpose. For five-and-twenty years, ejectments have not been known on some of those estates. There are, however, some exceptional cases where the tenants have their faith in their landlords shaken by such acts as a disproportionate increase of rents after they had effected improvements, and before time had been permitted them to reap their benefit. Some few instances have also occurred where tenants have lost altogether by eviction the value of improvements effected at their own expense, one, which I shall notice, occurred in the Dromore West Union. The tenant occupied a farm which had been previously held by his father, who erected a mill on it. The tenant made improvements on the land, levelled old ditches, blasted rocks, made drains, brought bad and indifferent land into cultivation, at an expense of over £100. The farm, which contained 28 acres, was held at an annual rent of £24, from a proprietor whose estates were sold in the Incumbered Estates Court in the year 1867. The new proprietor served the tenant with a notice to quit in 1868, and in due course he was put out of possession by the sheriff, and the fruits of his toil, and the value of his outlay are now enjoyed by the new landlord. The tenant-farmers seem to me to carry on now, as in times past, improvements on their farms, such as drainage and reclamation of portions of the bogs and mountains adjacent to their holdings. Improvements on the part of the landlord are rather on the decline.

Ulster Tenant-right.

39. I have been unable to learn that the Ulster tenant-right custom prevails to the extent I had previously supposed it did. In this county the landed proprietors, or many of them, I should say the great majority, deny its existence on their properties in toto, others admit its prevalence to a limited extent, whilst

others can give no information, inasmuch as no tenant has ever sold the good-will of his farm on their estates, and there never was, within their recollection, any change of tenants. I have, however, ascertained from inquiries, made from the tenants themselves, that in some instances, and not a few, the outgoing tenants have sold the "good-will." Within these three years was sold the good-will of a farm of 16 acres, which paid a rent of £16 a year, for £85. So also in Ballisodare West a tenant sold his good-will of a small farm for £20. In Dromore West Union a tenant sold his good-will in 30 acres, at a rent of 27*s.* an acre, for £100. Similar sales have been made in Tobercurry Union. The clerk of the Sligo Union, a most intelligent person, expresses himself thus—

"Generally the landlord permits the tenant to receive as much as he can get for the good-will of his farm (this, of course, being greater in the case of a farm on which improvements have been made than on one unimproved), but the landlord reserves to himself the right of objecting to the transfer of the farm, except to a person of whom he approves; consequently cases sometimes arise where the tenant is deprived of the fruits of his labour and expenditure. In a case of my own, a most independent man was rejected by the landlord, by which I lost £50 on giving up possession, and only allowed a year's rent then due, although I had expended hundreds of pounds in purchasing the good-will of the previous tenant, in buildings, and general improvements; and the land, except a small field, is since in the occupation of the agent of the estate. The person whom I had selected to succeed me was also to have paid the year's rent then due in addition to £50 for my good-will."

The clerk of the Dromore West Union informs me that the custom does not prevail; but in some cases the tenant is allowed, with the consent of the landlord, to sell his good-will. In the same union a collector, who collects poor-rates in eight electoral divisions, informs me that the custom prevails to a certain extent. A relieving officer, who is also bailiff on extensive estates in the north of Sligo, states the custom is latterly spreading, any sum paid is matter of private bargain, but the general thing is 8 or 9 years' purchase on the rental. I am informed by a Member of Parliament of an adjoining county that he permits the tenants on his Sligo estates to sell the "good-will," and that the custom extends both to leaseholders and tenants-at-will, and that the value set upon it may be defined at from £5 to £7 per statute acre.

40. Dowers and portions for younger children are not, as far as I have been able to ascertain, charged by tenants-at-will upon their temporary occupation.

Manufacturing Industry.

41. Handloom weaving is carried on extensively in this county; and the articles manufactured—frieze, flannel, blankets, and linen, are disposed of at the village markets to the surrounding peasantry.

Labourers resorting to England.

42. The labouring population do not resort in large numbers to England or Scotland; however, a considerable number go from the mountainy districts.

County Leitrim.

43. The Manorhamilton Union is the only union in this county under my charge as Poor Law Inspector, and is the most northerly portion of my district.

Houses.

44. The houses, which in general are substantial and good, have been built by the present and former tenants. A few landlords have supplied forest timber for roofing and doors.

Drainage.

45. The tenants, as a general rule, make the drains on their farms. On some large properties in this union they are allowed a portion of the expense of making them, provided the landlord or agent is pleased with their formation. Wherever main drainage has been carried on by the landlord to a large extent the thorough drainage is almost exclusively done by the tenant.

Reclamation.

46. Reclamation, to a large extent, has been entirely carried on by the tenant, who from time to time has brought tracts of mountain and bog into a state of partial cultivation.

Fences.

47. Fences, the making of which, here, cost more labour than where stones are more plenty, are chiefly a trench, having on one side a bank of earth thrown out of it; a layer of sods is placed on its summit, on which quicks are sometimes planted. The construction of those fences are nearly, if not altogether, the work of the tenants, quicks being supplied by some landlords.

Planting.

48. The planting of forest trees is confined to gentlemen's demesnes and to the picturesque glens in their own possession. Orchards are attached to numbers of farm-houses, and have been planted by the present and former tenants.

Tenants' security for improvements.

49. The tenant's security that he will not lose, in the case of eviction or surrender, the value of the above improvements, is the prevailing custom of the county, which is to allow the tenant to receive from the incoming one a sum of money commensurate with his improvements.

Increase of rent consequent on improvements.

50. It is not as a rule the practice to increase the annual rent, in consequence of improvements effected by the tenant, except in cases of reclamation, where he has held the reclaimed land for a number of years at a nominal rent. In such cases, at the expiration of, say seven or ten years, a revaluation takes place, and a rent is charged on the actual state of the land, which is the basis on which every ordinary valuation is made. Reclaimed bogs and mountains are thus raised from one or two shillings per acre, their original value, to from five to ten shillings per acre. It is unnecessary for me to say that in nearly every instance, where a landlord improves a tenant's holding, the rent is increased by a per centage sufficient to repay the outlay.

Evictions.

51. Only two instances have come to my knowledge where tenants have lost altogether the value of improvements effected by themselves, by eviction from their farms. The following distressing story in the simple language of a poor widow, will tell how eviction followed from some political difference between her late husband and his landlord:—

"My husband had 21 acres of land, and because he voted for the member, he was put out. He died of grief soon after. We lived not far from this, and the house out of which we were put was built by himself.

He was 30 years living with me in that house since our marriage. There was not such a nice house on the land. We had 21 acres. Five of that we took in from the bog. We paid £13 10*s.* for it always until it was reclaimed. The rent was then raised to £16, and now it is paying a great deal more than that, and we never got one farthing for that improvement which is making it pay rent now. An election came on. He unfortunately voted against the wish of our master. We were put out in the middle of Christmas, in the snow, and we owed no rent. I am now living under the best of good landlords, cousin to my former landlord. He allows every one of his tenants, when they leave their holdings, to sell them to any honest man that would buy them."

The second is that of a tenant who executed improvements on his farm, as I am informed, to the amount of no less a sum than £400. He held the farm for a number of years as tenant from year to year, when he was induced to alter this tenancy and enter into an agreement, a few years since, binding himself to surrender his holding on the 1st of the following November; also, that the rent accruing due on the 1st of November should be paid on or before the 1st of August previous, and if not, giving the landlord power to enter on the lands and distrain for same. In accordance with the extraordinary powers with which this landlord invested himself, he caused the tenant's cattle to be distrained in the month of September, 1869, for the rent due on the following November, and having received it, evicted him from the farm, either on or in a few days after the 1st of the following November, giving no compensation for the valuable improvements effected. The above case occurred on the estate of a noble earl within a few miles of the town of Manorhamilton.

Notices to quit.

52. Notices to quit may have been frequent in past years. Those have now entirely disappeared, as far as I can learn, except on the estates of the proprietor to whom I had occasion to refer when dealing with this subject in the Oughterard and Ballinrobe Unions, in paragraphs 9 and 23. In the present year the tenants on his vast estates have been served with notices to quit as they have been served before for many years gone by. I have learned that the practice on this estate is to hand the receipt for rent and the notice to quit together. I myself have seen a sheaf of those notices in the hands of one of those tenants, who informed me at the same time, that his life, and that of his wife and of his children were rendered miserable and wretched by the perpetual state of uncertainty and anxiety in which they were kept by those never-ending documents; this same tenant, in addition to the annual notice to quit, has this last year been forced to sign an agreement similar to that of the former tenant, and under which he was so summarily evicted, as in paragraph 51 is described. On my questioning him as to the necessity of his being served with a notice to quit when he could be put out on the agreement, he replied "*if he missed me with one barrel he can take me down with the other.*"

Ulster Tenant-right.

53. The Ulster tenant-right custom in different modified forms is found to exist on many large estates in this union, while on others it does not prevail in any shape, and is strictly prohibited. One landlord, writing of estates of the value of £8,000 a year, in

the electoral divisions of Glenfarn, Kiltyclogher, Cloonclare, Glenboy, Munakill, and parts of others, says:—"Tenant-right in the shape of payments of the incomer to the outgoer is the rule in this district—this simply for good-will, and irrespective of compensation for improvements, which seldom or never have been made, in the proper acceptation of the term. Individually I do not permit the principle of the highest bidder getting the land, as I consider it injurious to all parties. I settle the sum to be paid by the incomer, which he is not allowed to exceed. The custom extends to leaseholders and tenants-at-will, and I consider it to mean simply—just and peaceable possession by the incomer in exchange for his money, in default of which payment he would expose himself to persecution and malicious injury at the hands of the outgoer, his friends and clan." On other estates the custom is so much mixed up with compensation given for value of improvements, that it is very difficult to separate them. As far as I have been able to ascertain, there are few landlords who would not permit their tenants, if leaving, to receive full compensation from the incoming tenants for the value of improvements effected on their farms.

Dowers.

54. Dowers and portions for younger children are, in numerous cases, charged by tenants-at-will on their temporary occupations. In other portions of my district I found it difficult, and indeed impossible, to prevail on the people to show me one of those wills, they being apprehensive that some use might hereafter be made of those documents which might be prejudicial to themselves or their families. In this union I happened to fall into conversation with the son of what I might call the "trusty man of the parish"—"the village lawyer" to whom some of those documents had been intrusted for safe keeping; he (the son) showed me six of those documents, a copy of one of which I append to this report.

Manufactures.

55. Friezes, flannels, and other woollen stuffs are made in various parts of this district, and are considered equal to any other Irish woollen fabric, particularly the flannels, which are in great esteem at the county markets. The spinning of flax and the weaving of linen are carried on in some parts of this district to a considerable extent. The cultivation of flax is extensively carried on in this union under the instruction of a paid agriculturist. Two scutch mills are in operation in the town of Manorhamilton.

Harvest labourers.

56. Very few of the labouring population of this union resort to England or Scotland for harvest work; they are in the habit, however, of going to those countries where they obtain employment of a permanent nature in the factories.

GEORGE F. ROUGHAN, P.L.I.

January 15, 1870.

AGREEMENT REFERRED TO AT PARAGRAPH 23.

I propose and agree to take from you, from the 6th day of November, 1869, to the 1st day of November, 1870, for the grazing of sheep and cattle only, the grass of a field in , lately occupied by me as grazing, and to pay you or your agent the sum of , to be paid on the 1st day of August, 1870.

I further agree, that you may at any time during the period above mentioned, until the whole sum of £ shall be paid and satisfied, be at liberty to retain on said lands such portion of my stock as may be sufficient for the payment of said £ and all expenses that may be incurred in recovering same.

I further agree, that in case default shall be made in the payment of said sum of £ , on the day of payment before mentioned, that you or your agent may be at liberty to sell and dispose of so much of my stock on said lands as shall be sufficient for payment of said sum of £ , and all expenses that may be incurred by reason of such default, or otherwise to proceed against me as you may be advised.

Given under my hand day of , 1869.

Signed .

EXACT COPY of WILL, made by a TENANT-AT-WILL in the MANOR-HAMILTON UNION, referred to in paragraph 54.

In the name of God, amen, I, James M'Sharry, of Lisnagroughbar, being sick and weak of body, but of sound and perfect mind and memory, thanks be to Almighty God for same, do make, ordain, and publish this my last Will and Testament in *maner* and form as follows:—1st. I will and bequeath unto my loving wife and children the whole of my land and stock in Lisnagrough, so long as she remains single; and if she marries, the land will be given to my two sons, Bryan and James M'Sharry, until *the* come of age, and then it to go to James. 2ndly. If the land and stock sold, the price of it to be divided in equal parts between my six children, after giving my daughter Bridget three pounds over and above the rest of my children, and her share. 3rd. I allow all my lawful debts to be paid off my lands by my wife. If my wife and children goes to America the land to be sold, and the Executors to keep the money until they send them away. Lastly. I appoint Jn. Nixon and his son Allan Nixon, my sole Executors over my family.

Dated 22 April, 1856 six.

Witness whereof I have annexed my hand and seal.

Witness—

Jn. Regan, Pat. Hume, T. M'Gourity.

his
Jas. + M'Sharry.
mark.

VI.—REPORT FROM MR. W. J. HAMILTON.

DISTRICT comprising the COUNTY of WATERFORD and parts of the COUNTIES of CARLOW, CORK, KILKENNY, LIMERICK, TIPPERARY, and WEXFORD.

Fiddown, Piltown, January 14th, 1870.

GENTLEMEN,—In accordance with the directions conveyed to me in your letter of the 2nd ultimo, No. 30,290/69, Miscellaneous, I have made inquiry generally throughout my district, in a summary way, as to the ordinary existing relations between landlord and tenant on the various points adverted to by the Chief Secretary of His Excellency the Lord Lieutenant, in his letter to you of the 30th November.

The district of which I am the Poor Law Inspector is comprised in the counties of Kilkenny, Tipperary, Waterford and Wexford, and a small portion of the counties of Carlow, Cork and Limerick; its area is 1,881,642 acres, rather more than one-tenth of all Ireland; its population in 1861 was 506,308, more than one-eleventh of the then population of all Ireland; its valuation is £1,336,198, about one-ninth of all Ireland.

The average number of persons to each square mile was, in 1861, 171, varying from 128 in Urlingford Union to 306 in Waterford Union; it is less now. The emigration from my district has been over the average of the other counties of Ireland; and the next census will, I think, show a decrease of population in this district, greater than the ratio for all Ireland.

The valuation per head was, in 1861, about £2·6

With few exceptions, the persons to whom I forwarded queries are personally known to me. I selected them without reference to their political views or any other consideration than a desire to ascertain facts from every shade and variety of opinion in each class. I confess that I was not without some misgivings, that owing to the excitement and uncertainty which have latterly prevailed, and other causes, there might be some unwillingness to afford information, and that, even when afforded, there might be difficulty in reconciling statements from so many different points of view, and embracing such an endless variety of conditions. Such has not been the case. The queries have not only been readily responded to, but the replies generally evince a broad, liberal, and even generous spirit, and they afford strong grounds to hope, that while there is, on the one hand, no general indisposition to give either security or compensation to tenants where deserved, there are not, on the other hand, the extravagant or

preposterous expectations on the part of the tenants generally, which have so often been attributed to them by those who profess to represent them and their interests. There is, moreover, a more general concurrence of testimony on the points specially adverted to in Mr. Fortescue's letter than I was prepared to expect.

On the whole, I think the replies to the queries contain a mass of valuable information, they are conclusive on almost every point, and contain almost every detail of the contrariety of custom on different estates, even in the same county. I feel deeply indebted to the writers for the trouble they have taken, and the ready and willing assistance they have given to me.

I now proceed to report in a general manner, what is the practice within this district as to making improvements on farms.

1. *Building of farmhouses and offices, and extensive repairs of these, such as roofing.*

There are instances in nearly every union in this district where landlords undertake all the work of approved buildings and out-offices, generally charging £5 per cent. on the outlay; in other instances considerable aid or allowances are made without charge.

On some estates slated buildings are erected at the joint cost of the landlord and tenant. On most large estates timber and slates are given, or allowances for roofing are made, varying in amount.

In a few instances doors and windows are likewise given.

In most instances dwelling-houses and offices, especially small dwelling-houses and offices, have been erected and maintained at the sole cost of the tenant. In this respect portions of the unions of Urlingford, Thurles, Tipperary and Wexford appear to be above the average.

2. *Drainage.*—A few landlords have expended large sums for drainage, and have not made any charge to the tenants.

In almost every portion of the district sums have been advanced by the landlord, for which, in general, £5 per cent. per annum has been charged.

In many instances allowances, sometimes as much as one-half, but more generally one-third, have been made to the tenants, and, in some of these instances, there has been no increase of rent.

In other instances £3 per statute acre is allowed.

Landlords' allowances vary. The tenant almost invariably supplies the stones and fills in the drains.

In some localities the tenant has effected the drainage entirely at his own risk.

There is still room for much drainage, and especially so in the unions of Thurles and Urlingford. Comparatively little is now done by either landlord or tenant in proportion to the large extent of land which requires it. Some of what has been done has been badly done, and the land has either already gone back, or is returning to its original condition. There are rivers, streams, and rivulets which require co-operation on the part of those affected

by them. It is believed that if the tenant could borrow money in a simple legal form, a much larger area of drainage would be done, to the general benefit of all classes.

3. *Reclamation of land.*—Very few instances in this district of reclamations on a large scale. In probably one of the largest (county Wexford), "perpetuity of tenure induced it." Such reclamations are generally undertaken by the poorer classes of tenants entirely at their own risk.

On most estated properties allowances are made by the landlord; in some instances very liberal allowances are made. These allowances vary much. Lime is given in some cases at reduced cost—clearances of stones allowed for according to circumstances. In some instances waste land is let rent free for two, three, or four years, in others for a longer period at a nominal rent. Tenants prefer to do the work in their own way rather than add to their rent what may become a permanent charge. When done by the tenant a long lease is generally sought for at the unreclaimed value.

In many instances, when the landlord provides the funds, 5 per cent. is charged on the outlay.

On the whole, it may be said that there has not been much reclamation since the famine years. Labour in the country districts is now generally scarce.

There is, I believe, compared to other parts of Ireland, less field for works of this nature in this district than in some others, and until labourers become more easily obtainable in the country districts, it is not probable that much more will be attempted; as it is, some of the land reclaimed has gone out of cultivation.

4. *Fencing, iron gates, &c.*—Iron gates are freely given to tenants by some landlords, provided the tenants erect the piers; in other instances half-price is charged for them, or the iron is provided by the tenant, and the landlord's smith makes the gates. In other instances timber is given. The landlords who make such allowances are the exceptions. As a rule, no allowances are made to tenants for either fencing or iron gates.

In a few instances the boundary fences are made by the landlord, and thorn quicks are given for interior farm fences. As a rule, the fencing and squaring of fields is done by the tenants at their own expense.

There has been some improvement of late years, but in many portions of the district an improved system of fencing is much needed; as it is, waste is enormous, and many fences might be levelled with advantage. It is still not very exceptional to find a stone gap, or a cart, or a plough, &c., stopping the way.

5. *Planting.*—Planting is almost exclusively done by the landlord on lands excepted and reserved, and not in the tenant's possession or occupation. Trees are not often seen on the lands of tenants from year to year; but now and then, where safety of tenure exists, trees may be seen.

As a rule, there is very little planting now, and little has been done for some years past.

But here and there some landlords have planted extensively, and small plantations are occasionally made by landlords on pieces of land which they have taken into their hands.

Landlords chiefly plant on lands in their own hands; in a few instances tenants plant for shelter, still more rarely for ornament.

A few landlords give trees gratis to any tenant.

In a few instances tenants with leases register the trees under the Timber Act, and secure compensation.

As a rule, planting by a tenant is almost unknown. More planting would be desirable for shelter on exposed land.

It is thought that if the law were changed, and the planter allowed to cut or sell, some unproductive land might be planted.

In some portions of the district the land is too good to be spared for planting.

Q. "*Whether any of these, and if so, which, are executed at the cost of the landlord, or whether they are done by the tenant at his own cost; and, in the latter case, whether the tenant has by custom or practice any security for the value of his improvements, either by guarantee or understanding, that he will receive a fair proportion in the event of eviction or surrender, or by guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period?*"

I have already replied to the first portion of this query in the answers to the preceding queries. Where improvements have been executed by the tenant at his own cost, there is almost unanimous testimony to the effect that, excepting where he holds by lease, he has no absolute security for his expenditure, no understanding that he will receive a fair proportion in the event of eviction or surrender, no guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period—nothing beyond the confidence which he places in the character and good faith of his landlord, and the practice of the estate. There is much evidence to the effect of—"the feeling of confidence that they will not be evicted"—"certain not to be disturbed while he pays his rent"—"hope that the landlord, being a good man, may never disturb him"—"the invariable practice of the estate"—"the honour and honesty of his landlord"—"good disposition of his landlord"—"good feeling and liberality of his landlord"—"guarantees do not exist"—"custom does away with the necessity"—"usage is the guarantee which the tenant has of not being disturbed"—"occupation" is "fixity of tenure"—"the practice is, to be thankful for a good tenant, and keep him"—"the tenant relies on the honour of his landlord that he will be treated fairly"—"undisturbed enjoyment"—"general custom of not disturbing solvent and improving tenants"—"feel that so long as they pay their rents they have practically fixity of tenure." There is in point of fact no positive safety for tenants from year to year.

In portions of the county of Tipperary, reference is made to

acts of injustice resulting from the tenant having, as the law stands, no property in his capital or labour.

These acts have been followed, in one or two localities, at least, by practically giving a fixity of tenure, conquered from the landlord by fear; and it is stated that the tendency is to re-establish a Ribbon code, and make even a just increase of rent impossible. On the other hand, a large estated landlord, who has lived amongst his tenants, in another portion of this same county, states—"I would not exchange my Irish estates for any property in England."

Q. "Whether in either case the annual rent is usually increased?"

There are many instances in every part of the district where the annual rent has not been raised under any circumstances for many years past.

The general practice is, where improvements have been made by the landlord, the rent is increased by a per-centage on the outlay.

On the expiration of long leases or the re-arrangement of farms, rents have been raised, and, in some cases, on the tenants' own improvements.

Of late years especially, it is not customary to raise rents on tenants in consequence of their own improvements. There are some localities in which there is not the same freedom from this evil as others; for instance, in portions of Dungarvan, Kilkenny, New Ross, and Thomastown Unions.

When property changes hands the rule is, that the rents are increased without reference to how the value of the property may have been increased.

In some cases the rise in prices has fully justified a re-adjustment of expiring contracts; for example, prices were as follows—

		In 1845.				In 1870.			
		s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Oats	per barrel	8	0	—		11	6	—	
Hay	per ton	20	0	to 23	0	55	0	to 60	0
Straw	„	15	0	„ 18	0	50	0	—	
Beef	per lb.	0	4	—		0	7	—	
Mutton	„	0	4	—		0	6	—	
Butter	per cwt.	60	0	—		120	0	—	
Bacon	per lb.	0	4	—		0	10	—	
Small weaned Calves		20	0	„ 25	0	50	0	„ 65	0
Yearlings		50	0	„ 60	0	90	0	„ 100	0
Eggs and Poultry				—		double at least.			
Horned Cattle				—		nearly double.			
Horses				—		nearly double.			

On the other hand, there is the potato failure; higher county rates and higher poor rates; wages nearly double, and labour scarce in many of the country districts, and not the good feeling between the farmers and the labourers which generally insures good value in work.

Q. "Whether there are many instances of tenants losing altogether the value of improvements effected at their own expense through eviction or disproportionate increase of rent?"

There is an overwhelming weight of evidence to show that, of late years, instances of tenants losing through eviction the value of improvements effected at their own expense are extremely rare. Such instances are, in point of fact, unknown on the vast majority of properties in this district, but there is evidence to show that rents have been increased by new proprietors, and in a very few instances too, by others; and thus tenants may have, and I believe have lost the value of improvements effected at their own expense.

There are allegations of more numerous exceptions to this general rule in portions of Urlingford Union in particular; in portions of Dungarvan Union, and in portions of Kilkenny Union, New Ross Union, and even Wexford Union, instances rather above the average are referred to in general terms. In each of such cases it would be necessary to have all particulars and details on both sides before any opinion of value could be expressed.

I have purposely avoided going into individual cases, which possibly may become matters of litigation, or where even worse consequences are possible, because, in the first place, such interference on my part would be unauthorized, and even if it were permitted I might do more harm than good in having anything to do with such cases, where I had not power to settle them.

There can be no question that the power of inflicting injustice and oppression does exist. The fact that it is rarely exercised reflects credit on the Irish landlords as a class, but it has been exercised in rare instances, and ought, I think, to be reduced to a minimum, if an impossibility cannot be arrived at. I have been credibly informed that in the entire of the county of Kilkenny only six ejectments were executed by the Sheriff in the year 1869, and a similar number in the county of Wexford; and very probably a satisfactory explanation could be given in the majority, if not in every one, of these cases.

Few improvements are made under bad landlords, and when land and buildings are got up through the Sheriff, which of late years has been comparatively, if not positively rare, they are generally in a bad and deteriorated condition.

Q. "Whether improvements are on the increase or declining?"

There is abundant evidence that improvements generally are on the increase. In some localities the rate at which they were progressing has been considerably retarded by the present state of uncertainty, and pending the settlement of the land question.

Improvements by proprietors, and in cases where tenants are assisted by proprietors, are on the increase. In portions of the district about Dungarvan and Kilmacthomas in particular, improvements are either at a standstill or are on the decline. In other portions of the district there has not been much done of

late years, but even in these instances improvements are on the increase, where confidence is felt. In some portions labour is scarce and high, and the want of facilities in this respect has, it is said, interfered with improvements.

In general I think it may fairly be said that improvements are rather increasing.

There is no portion of the district in which there is not still ample room for improvement. A comparatively small area of it can be said to produce what it would do if it were farmed, as it is to be hoped it may some day be. Nevertheless, when I remember the general face of the country in 1842, and compare it with what it is now, and remember what it has gone through in the interim, the general improvement has been very remarkable. Until recently improvement was advancing steadily and naturally but not very rapidly.

I hope and believe that as soon as more general confidence is established, there will not only be no retrogression or standing still, but that improvements will progress in every portion of the district.

Q. "*To what extent have the dwelling-houses, offices, fences, roads, reclamations, works of drainage, plantations, &c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and, in fact, constituting those farms, as distinguished from waste land, been created by the present or former tenants, or by the present or former landlords respectively?*"

In former times such works were created almost invariably by the tenants.

I believe that almost universally the poorer class of thatched houses and even most of the better class, were erected by former tenants. Works of drainage and plantation were then very rare .The present tenants, and many of the present landlords, have done much, but, as a rule, for the most part the original occupiers built their houses, offices, &c., and made the fences, roads, and reclamations. The extent to which works have been contributed by landlord and tenant, or been entirely done by either, has been generally stated as far as is practicable in replies to former queries. In some few instances, roads, reclamation, works of drainage, plantations, &c., have been done by the landlord in the present generation. On most of the large old estates the tenants have been undisturbed from generation to generation, and I believe it would be impossible to answer this query with any degree of accuracy, but it is very generally admitted that the original occupiers created most of these works, however humble or important.

I believe that in the last quarter of a century the landlords have done very much more than was previously done. Some of these works may have been created by middle men, now happily extinct as a class.

Most of the slated roofs have, in many parts of the country, been substituted within my own recollection.

I regret that the reply to this query should not be more

satisfactory and conclusive. Many did not attempt to answer it. There are no very irreconcilable differences in the statements of landlords and tenants where the query has been replied to.

Q. "Whether notices to quit are of frequent occurrence; and if so, are they generally followed up?"

Of late years, on well arranged estates, notices to quit are almost unknown. On such estates they are served for exceptional and special reasons, and are followed up, or not, according to circumstances, in each individual case.

As a rule, so long as tenants fulfil their obligations they have scarcely ever of late years been served with such notices. They are served now and then for non-payment, or want of promptitude in the payment of rent.

They are sometimes served in cases of crime, family disputes, squaring of farms, breaches of covenant, such as subdivision (now very rarely desired or attempted), outrageous conduct, harbouring improper characters, permanent injury of land by removal of surface soil, &c., and in some instances they have been served to compel an increase of rent, and in this respect portions of Urlingford Union appear to be above the average. As a rule, cases of this kind are settled and conceded; if not, they are followed up.

Q. "Whether the Ulster tenant-right custom is in existence in your district; that is to say, whether any paymemt is made to the outgoing tenant, with or without the consent of his landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the tenant or by preceding tenants."

The Ulster tenant-right is not recognised in this part of the south of Ireland, but outgoing tenants frequently, if not invariably, receive payment for their good-will, in general with the consent of their landlord, sometimes without it. This payment sometimes includes compensation for improvements actually made by the tenant or by preceding tenants. On one large and well-managed property (the Marquis of Ormond's), the agent, who is a gentleman of experience, states, "sums varying from £20 to £2,000 and upwards have been paid by incoming to outgoing tenants, according to the size of the farms, and I have found that with care and proper restriction, it worked satisfactorily;" but, more generally, it is for the good-will and peaceable possession, for, excepting in cases of expiring contracts, a change of tenancy seldom takes place until tenants are heavily in arrear, and their holdings deteriorated rather than improved.

In a few portions of the district this practice is not recognised, but the rule is the other way, and on most properties it is permitted, providing the incoming tenant be approved of.

In a portion of the county Tipperary "good-will is paid for to deprecate 'ill'-will, and the man who takes land without having first settled with and satisfied the last occupant risks his life. It is not a practice here of compensation for improvements, it is the purchase of peaceable possession."

In one portion of the county Tipperary, and on Lord Granard's estate, in the county Wexford, Ulster tenant-right custom is in existence.

Q. "*If such a custom exists,* (i.) *whether it is confined to tenants holding at will, or extends to leaseholding tenants;* (ii.) *whether it can be defined and a value set upon it at so many years' rental, or at so much per acre*; (iii.) *whether the custom, if it exists, is spreading and gaining ground in your district, so far as your experience goes?*"

As I have already stated, the Ulster tenant-right custom is only in existence in this district in two instances, so far as I am aware; in neither of them is it confined to tenants holding at will. So far as the practice referred to in reply to the preceding query extends, it is not confined to tenants-at-will. In case of a lease, the consideration is paid for real or supposed interest in the lease. No definite value can be set upon it; it is chiefly regulated by the desire of the purchaser to get the possession, the reputation of the landlord or of his agent, the general treatment of the tenants upon the estate, the condition of the farm, the rent upon it, the probability of undisturbed and peaceable possession, &c., &c. Large sums are given in such cases; and even in cases where, in some of these respects, the circumstances are not favourable or promising, such is the competition for land, that sums having no reference to the intrinsic value are given.

In some portions of the district the practice, to the extent that it exists or is permitted, is increasing, in others it is stationary, and in others it is altogether unknown.

Q. "*Has it come within your experience that dowers, portions for younger children, or the like, have been charged by tenants-at-will upon their temporary occupations?*"

Tenants frequently by will, or agreement in the nature of marriage articles, charge their farms with portions for their widows and younger children, irrespective of their tenure, whether freehold, leasehold, or from year to year. It is a common practice.

In some instances such charges are very considerable, and cripple the successor. They sometimes lead to litigation and ill-will, but, as a rule, they are rigidly carried out.

Sometimes directions in this respect are given upon the death-bed, and in such cases they are in most instances religiously observed.

Though such arrangements are sometimes detrimental to properties, they are very rarely interfered with; indeed it is, I believe, more common for the landlord or agent to assist and advise, than to throw any obstacle in the way, provided the farm be not subdivided.

Q. "*Does manufacturing industry, either on a large or small scale, prevail or exist in your district, meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of whatsoever sort?*"

The only manufacturing industry on a large scale exists in the union of Carrick-on-Suir, in which the Messrs. Malcomson have a large factory at Portlaw and at Carrick-on-Suir.

There is a ship-building yard at Waterford, and likewise at Wexford.

There is a spinning and weaving mill at Clonmel, and also a woollen factory at Ballymacarbery; large brewery at Waterford, Kilkenny, and Clonmel; distillery at Wexford. A small sawmill at Cappoquin is about to be opened.

Small woollen factories are to be found here and there, for instance—at Kilmacthomas, New Ross, Thomastown, and shirt-making, lacemaking, &c., are to be found in some localities; but, as a rule, the produce is merely confined to local wants. It may be said generally that, with the exceptions I have mentioned, manufacturing industry does not prevail in this district.

Q. "*Does the labouring population in your district go over to England or Scotland for harvest or manufacturing work; and if so, to what extent?*"

There has not been for some years any periodical migration of the labouring population for harvest work to either England or Scotland. A few go permanently to England and Wales; a few go to English manufactories—not many now. The labouring population is much thinned by emigration.

I have now reported in a general way on the several points suggested in Mr. Fortescue's letter. I would beg respectfully to add that I have been acquainted with the district of which I am the Inspector since 1842, having served on the Staff in the then S. W. Military District, and been in the habit from time to time of travelling over much of the country which has since been, or now is, included in my present district as Poor Law Inspector. In 1846-47 I served, in the King's county, under the Board of Works and Relief Commission respectively, and, in the autumn of 1847, I commenced my duties as Poor Law Inspector in one of the most distressed portions of the county of Mayo. This is my eighteenth winter in the Waterford district.

For twenty-seven years, therefore, I have had more than ordinary opportunities of mixing with all classes, and I have not failed to avail myself of them. I have heard, so far as was possible, what was to be said on both sides of the land question, and by every class in every part of my district, and endeavoured to form impartial, as they certainly were disinterested opinions.

I have devoted much attention to the subject of the relations between landlords and tenants, and I have long formed mature and decided opinions to the best of my ability.

I am aware that my opinions are of little consequence, and can have no weight in the consideration of so vast a subject. Nevertheless, I have been afforded an opportunity of expressing them, and I have the satisfaction of feeling, that if it is out of my power to do good, it is equally so to do mischief, for I should think it is almost impossible to mix, as I have done, with every class under almost every variety of circumstances, in adversity and in comparative prosperity, without seeing much that is good on both sides, and sympathizing with each, desiring to preserve what is right, and to see what is wrong made right.

It is because I think that Irish landlords and Irish tenants have

been, as classes, unjustly assailed, often ignorantly, and often wilfully misrepresented, that I desire to bear record to what I believe is the truth.

There is not any portion of my district in which landlords may not be found, who rejoice in the prosperity and happiness of those around them, and who are repaid by the confidence and affection of their tenantry.

Again, there are many others, who if not benefactors, have strict ideas of justice, but unquestionably, here and there, there are exceptions where extreme rights are exercised, and now and then acts of injustice are perpetrated without any power of appeal, which acts tend, not only to want of confidence between the landlord and the tenant, in the special and exceptional cases to which I refer, but do an infinite amount of mischief, and are calculated to create a feeling of insecurity among the whole class of tenants. I believe there are comparatively few unjust landlords in Ireland, and that at no former period have the relations between a vast majority of landlords, representing a still more vast portion of Ireland, and their tenants, been more generally satisfactory than they now are.

I believe too, that there are comparatively few bad tenants in Ireland in the general acceptation of the term, and that at no former period have rents been more punctually and cheerfully paid than they are, and have been for some years past.

It might be inferred, from what I have said, that I think there is no necessity for change in the existing relations between landlords and tenants; now, while I have deliberately stated that there is very much that is good, I have for some years past strongly desired to see such a change as would give increased stability of tenure to the tenant, and while strictly guarding and protecting the just and equitable rights of the landlord, reduce to a minimum the possibility of injustice and oppression to the tenant. I have, moreover, desired to see such a change as would prevent the possibility of any of Her Majesty's Courts of Law, or of Her Majesty's forces being compelled by act or part to appear to be in alliance with injustice and oppression. I need hardly say that the difficult problem of compelling, by legislation, an unjust landlord or a bad tenant to do what every just landlord and every good tenant already does, even in the present unsatisfactory state of tenure, to the best of his ability and of his own accord, has been rendered still more difficult by disturbing influences, and by professional agitators, who generally have no interest in the matter beyond mere personal advancement, and whose efforts appear to be directed to do evil rather than do good, and to prevent, if possible, the calm consideration of any subject likely to tend to peace and good-will.

I want to see tenants from year to year, in particular, protected by legislative enactment, as far as possible, against capricious, arbitrary, or usurious proceedings, so long as they faithfully fulfil their obligations, without at least the power of appeal to an impartial authority. I believe caprice, unlimited power, and usury to be inconsistent with justice, and I think that without justice there can be no feeling of confidence either on the part of the landlord or of the tenant, and certainly no hope of peace.

I believe that no just landlord will suffer any inconvenience from moderate legal protection and encouragement being given to at least a portion of the security he now voluntarily gives his tenants, and nothing has afforded me more pleasure, in the inquiries I have been recently making, than to find concurrence in this view by some gentlemen of large experience in dealing with tenants in every portion of my district.

If land in Ireland were let as it generally is in England, I dare say I might take a somewhat different view of the case of a tenant from year to year in Ireland. In England the usual practice is for the landlord to make the improvements, and to erect the farm-buildings, and he is paid accordingly.

In Ireland, from various causes, such improvements, for yearly tenants in particular, though generally to be found on well managed estates on equitable, if not liberal terms, are not the custom of the country, and it is not exceptional that improvements, suited to their requirements, have been effected by tenants from year to year, without any security whatever. We must all regret, I think, that such improvements, by whatever means effected, are not the rule. I want to see superior comforts, and I think that in order to foster industry and money-making habits, and make up, as far as possible, for the want of skill and capital, which too often marks the poorer class of Irish farmer, the utmost amount of security and fair play should be given to him, without infringing the just rights of the landlord; and these rights vary much more than is generally believed.

I believe that safety of tenure would exercise an immense influence for good upon the moral and social condition of Irish tenants, and I would appeal to those estates, and they are many, where there is a feeling of confidence and security founded upon years of honourable understanding and dealing on both sides, as models of what I should wish to see more generally prevalent. All that is required in such cases is, to substitute safety for security, and oblige, if possible, a new landlord or a new agent, to let well alone where it can be shown to exist.

All experience shows that changes of proprietors tend to keep alive uncertainty of tenure, and hence the unavoidable operations of the Incumbered Estates Court and Landed Estates Court have been, in my opinion, a largely contributing cause to the insecurity which is felt.

About one-sixth of the cultivated land of Ireland has changed hands under the operations of these Acts. What portion of the proceeds of the sales justly belonged to the tenants, will probably never be known. Whatever the amount may have been, the land proprietor who sold has been the only person benefited by the increased value, and the fact that purchasers have paid for the improvements, has doubtless led to rents on such properties being raised, and other proceedings in many instances, and has, I believe, caused much of the discontent which prevails in some places.

I do not feel so strongly as regards tenants with leases, because I think, where an agreement for a certain number of years terminates, it is open to either party to make fresh terms. I am aware

that there has been, and may be, injustice to this class of tenants too, but not to the same extent as to a tenant from year to year, and the former has it in his power, to some extent, to guard against injustice where he anticipates it. It is here that the subject of compensation for unexhausted improvements becomes chiefly important. As a rule, any tenant who can pay his rent, whether holding by lease or from year to year, will not voluntarily surrender his holding until the question of compensation to the landlord would be a more appropriate one than that of compensation to the tenant. But in cases of unexhausted improvements, where there is indisposition on the part of the landlord to renew a lease on equitable terms, I should like to see some Court of appeal to deal with each case on its own merits. I believe that such cases would be rare. In either case, whether as regards a tenant from year to year or a tenant with a lease, all that is required is to compel, as far as possible, those who are unjust landlords, or those who are bad tenants, to do what all good landlords and all good tenants already do, viz., do unto each other as they would be done by, and be true and just in all their dealings.

I think in every case there should be at least a security similar to a lease of reasonable duration, because, notwithstanding all that has been urged to the contrary, I think it is just and reasonable that a tenant wishing for safety should have it; and for my own part, as one connected with land, though in a small degree, I cannot regard the giving of such security, in any way the Legislature in its wisdom may think fit, as any infringement on the rights of the landlord, or any possible injury to him or his successors.

It seems to me that it would paralyze all hope and industry, and destroy all confidence and good feeling, if I, as a landlord, were to propose to a tenant to increase his rent, simply because, by the exercise of his skill, or capital, or industry, he had improved my land; and I have had proofs that tenants who know my feelings in this respect are not behindhand in doing their part to improve their holdings to the extent of their ability.

So far from regarding a compliance with the reasonable wishes of any tenant for the security which, if I were in his place, I should wish to have, as an injury to myself or anyone who may succeed me by inheritance or purchase, I believe that by enabling a tenant to improve his condition, the true interests of the landlord are as much benefited as are those of the tenant; whereas if I were to throw unnecessary impediments in his way, or seek to make gain out of what I think properly belongs to him, with a view to enhance the value of the estate, and thus possibly tempt some usurer to step in, I should not either deserve to be called an honest man, or have that clear conscience, without which any estate must be of little real value to its possessor.

Now, I cannot shut my eyes to the fact that the law does give powers which have been abused in exceptional cases, and which have brought it into disrepute, if not contempt, to an unsafe extent. I am not one of those who think that the Irish tenants desire to become the possessors of property by unfair means. I

think highly of Irish tenants as a class; and I have never met with, and seldom have heard of, a tenant who is unwilling to pay a reasonable rent.

My experience of tenants leads me to believe that there can be few tenants in the world who are more loyal than an Irish tenant is to a just landlord, or who, as a general rule, in cases of poverty, will pinch themselves and their families more to pay the rent. I believe that the atrocious and horrible assassinations which occur from time to time are chiefly confined to the lowest class of the peasantry, and seldom include a farmer, or indeed any person possessed of any security in the soil. As I have already said, at no former period have rents been paid more cheerfully than they are now, and I have not for years past heard any complaints on this subject.

I have often heard it asked why a man will take land on such a precarious term as to tenure as that from year to year. The simple answer to that is, that he has no alternative. I believe he only does what others do when the demand exceeds the supply. It is his struggle to live, and if in the pressure of the crowd he cannot get sitting room, he must be content to stand, and take the extra risk of being crushed and trampled on—though he may be, in every respect, as good as those who are comparatively safe and have not paid more for their accommodation than he has.

I have heard it strongly urged that land is in all respects similar to movable property; but it seems to me that there are responsibilities in connexion with land which are more grave than as regards the trust of any other earthly property, and that in discharging ourselves of these responsibilities we should be guided by Divine law, and see that our human laws do not lend their protection or sanction to anything that is inconsistent therewith,—and where there is, as I apprehend there is, any union between law and injustice, there should be, not only such a divorce, but such stringent provisions against injustice, either on the part of the landlord or of the tenant, as will, even in our own time, bring down the blessings of all good men on those who rule and those who serve; and though we may not live to witness the effects of just land laws, and that evil influences, so long at work, may still prevail more or less—still, it will be a satisfaction to know that those who come after us—our children's children—must, sooner or later, reap the fruit of the pure seed, that they will be willing and able to recognise the hand of justice holding the scale of the Irish land laws, and be enabled to say that those who framed them neither leaned to one side nor the other, but dealt with the interests of each class to the best of their ability, and at least without favour, partiality, or affection.

I have the honour to be,
Gentlemen,
Your most obedient servant,
W. J. HAMILTON.

To the Poor Law Commissioners,
&c., &c., &c.

VII.—REPORT FROM MR. O'BRIEN.

DISTRICT comprising the COUNTY of LOUTH and parts of the COUNTIES of ARMAGH, CAVAN, DOWN, DUBLIN, FERMANAGH, MEATH, MONAGHAN, and TYRONE.

Dublin, 18th January, 1870.

GENTLEMEN,—Pursuant to the instructions conveyed to me in your letter of the 2nd ult., I have now the honour to submit to you, for the information of His Excellency the Lord Lieutenant, my report upon the various points connected with the position of the occupiers of land in Ireland, set forth in the communication addressed to you on the 30th November last, by Mr. Fortescue, and a copy of which accompanied your letter to me.

The district at the present time under my charge, and to which alone this report is intended to relate, comprises in all 16 Poor Law Unions—of which 10 are situated in the province of Ulster, and 6 in Leinster—comprehending either the entire or portions the following 9 counties, viz.:—In Ulster—Armagh, Cavan, Down, Fermanagh, Monaghan, and Tyrone; and in Leinster—Dublin, Louth, and Meath; having in all an area of 1,625,766 acres, a population of 615,417, and a valuation of £1,510,790.

The total number of agricultural holdings comprised in the entire district, as shown by the "Tenure Returns" recently furnished to your office by the several clerks of unions, is 96,803. Of these 3,980 are either occupied by the owners or held in perpetuity, 11,402 are held under terminable leases of one form or another, and 81,421, or more than five-sixths of the entire, are held by tenants-at-will, or, more properly speaking, by tenants from year to year.

The circumstance of my district comprising not only parts of two provinces, but also of so many separate counties in each, differing widely in several essential particulars from each other, both as to custom and condition, &c., will probably render it necessary for me to extend my observations to a greater length than I should have otherwise had occasion to do; but, as some compensation for this, it is perhaps not unreasonable to assume, that the facts connected with it, which it will become my duty to bring under your notice, may be regarded as furnishing, upon the whole, a tolerably accurate illustration of the state of things prevailing, generally, throughout the two provinces named.

I shall, in dealing with the several heads of inquiry concerning which information is desired, pursue here, as nearly as possible, the same order of reference to them observed in the Chief Secretary's letter.

I.—Improvements.

Practice as to the execution upon farms of such improvements as:—(1.) Building of farmhouses and offices, and extensive repairs of same, such as roofing, &c., &c. (2.) Drainage. (3.) Reclamation of land. (4.) Fencing and erection of iron gates. (5.) Planting.

In proceeding to explain the actual facts and practice bearing on the above important subjects, I may, for convenience of reference, treat my district as including three distinct territorial divisions, all distinguished from each other by clear and intelligible differences as to custom and condition, &c., viz.:—

No. 1—comprising the unions of Kilkeel, Newry, and Armagh, situated in the counties of Armagh, Down, and Tyrone; No. 2—the unions of Bailieborough, Cavan, Cootehill, Carrickmacross, Castleblayney, Clones, and Monaghan, in the counties of Cavan, Fermanagh, and Monaghan, and No. 3—the six Leinster unions of Ardee, Balrothery, Drogheda, Dundalk, Navan, and Kells, which, for the purposes of this report, may be here classed under the same head, though including such diversities of country as are represented by the large grazing farms of Meath, the extensive tillage farming which distinguishes Louth, and the more mixed system prevalent in the metropolitan county.

There are two general propositions which, at the outset, I think may be laid down as being almost equally applicable, in substance, to each of these three divisions, and as to which very little or no controversy can, I take it, exist:—

First.—That up to the occurrence of the Irish famine, or at all events up to a period approaching very nearly to that event, the several classes of improvements upon farms now under consideration, save, perhaps, planting, were, as a general rule, effected at the sole expense of the occupying tenants; this, of course, subject to exception as regards particular districts and individual estates so limited, however, in extent and number as not to affect, materially, the general conclusion just expressed.

Second.—Another proposition, and one equally incontrovertible, I take to be this, viz.:—that in a very large proportion of cases, these improvements, as—in the words of Mr. Fortescue's letter—"now existing upon the farms in Ireland, and, in fact, constituting those farms, as distinguished from waste land," are of a nature which, at the present time, it would be practically impossible to define or estimate the value of with any approach to accuracy; while, in many respects, they consist—at all events in the case of the small holdings—of what, though intrinsically very valuable to the present race of occupiers, and having also a tangible market value for such of them as may be obliged by force of circumstances to part with their holdings, would, nevertheless, there can be no doubt, be now viewed and treated by an ordinary

landlord, anxious for the abolition and consolidation of small holdings, not only as lending no additional value whatever to the land, but as, on the contrary, in some measure absolutely detracting from it.

The entirely different point of view from which certain classes of additions made to the land, as it originally stood, are now regarded by landlords and tenants respectively, furnishes the true explanation, as it appears to me, of much of the controversy which has recently prevailed upon this particular subject, and it therefore becomes absolutely necessary at the outset, that the precise facts connected with it should be distinctly understood.

In several of the communications addressed to me, containing replies to a series of queries extensively circulated by me throughout my district, amongst those of all classes and parties who appeared best qualified, by practical knowledge and experience, to render valuable assistance to me in the present investigation, reference is made to this part of the case, from both the landlords' and the tenants' point of view, but in one instance the facts relating to it appear to me to have been stated so forcibly, and I think, at the same time, with so much accuracy, that I shall here take leave to quote the reply in full, merely premising that the writer is a Magistrate long resident and extensively engaged in agriculture in the county (Monaghan) of which he speaks, and that, though I have not the pleasure of being personally acquainted with him, he is well known to me by favourable repute, and as one whose statements upon any matters of fact coming within his cognizance, may be implicitly relied on.

He states as to this :—

"The improvements made by tenants and their predecessors here are of a nature to which it would be hard to affix a value. They arise more from the constant industry of man, continued from generation to generation, than from the actual or sudden outlay of capital. The removal of rocks, whins, boulders, building of fences, erection of houses, &c., have all been done in this way entirely by the tenant. In my recollection, large fields have, by gradual toil, been reduced to labour, and made capable of growing crops—they were nothing but wildernesses of whins and limestone rock—no trace remaining to show their former condition.

"This is still going on in some parts of the barony. Roads were made —even accommodation roads—by the county out of the public cess.

"The houses of the farmers are not such as are ever built by tradesmen, mere thatched cabins, erected by those who lived in them, with the help of a country carpenter to put on the roof (formed of bog timber).

"No landlord ever did anything for the land until after the famine years, and then only as described above."

Accepting the foregoing as what I most fully believe it to be, namely, a singularly just and truthful description of what was, at all events, a very common case throughout Ireland generally, before the occurrence of the famine, I shall next proceed to examine in detail how far the practice as to this, which prevailed up to

that time, has been since then modified or altered, either in the whole or any particular part of my district.

And 1st.—I shall deal with the facts as to this as they relate to the subdivision of my district already particularized as No. 1, namely, that comprising the unions of Armagh, Newry and Kilkeel, and, as the Chief Secretary has intimated in his letter that specific statements as to any particular union or portion of country which can be considered fairly illustrative of a wider district will be especially valuable for the purpose now in hand, I shall, as far as practicable, adhere to this course in the observations I propose to submit to you.

A gentleman of great experience in the management of property, thus answers my query upon this subject, with reference to an extensive estate situated in the counties of Down and Armagh, over which he has acted as agent for the past fifty years, and which comprehends an area of 75,266 acres, valued at £19,945. He says:—

"No building of farmhouses and offices, or the extensive repair of same, as roofing, done by the landlord, except rarely, when applied to by the tenant, and, if agreed to by the landlord, an interest at 5 per cent. for such outlay, to be added yearly to the rent. Offers of this kind have been refused by the tenants—preferring to build at their own expense. Draining and reclaiming of land, &c., &c., done in the same manner, when approved of by a competent person, and on the same terms as above.

"This, however, has not been taken advantage of as often as it should have been, in my opinion, by the tenant. Fencing and iron gates and planting done generally by the tenant at his own cost, and this practice has existed during the writer's knowledge as agent, say fifty years."

The property to which the foregoing observations apply is, I believe, in an exceedingly satisfactory condition, both as regards the interest of landlord and tenant. It is described as being almost "without an arrear on 31st October last," while, on the other hand, "the dwelling-houses and offices of the tenants are, in general, good, and in sufficient repair, and have been so for many years; and the tenants, on the whole, prosperous, well-conducted, and industrious;" a description of them, and their general condition, which my information and limited means of observation would lead me entirely to confirm.

Another gentleman, who acts as agent for a large estate, comprehending from 12,000 to 16,000 acres, situated in the county Armagh, and unions of Armagh and Newry, and which enjoys, I believe most deservedly, the reputation of being well and considerately managed in every way, writing on the same subject, states:—

"These improvements are made by the tenants, and have been so for many years. The landlord may occasionally assist by a donation as a reward to industry."

And again, he says:—

"Though the landlord has not invested money in improvements, he has otherwise shown his sympathy in the bad seasons by a discount of 20 per cent., granted for four years, to those holding on lease, as well as those at will."

A third correspondent—recently a member of the Legislature, and possessing much general intelligence and experience as a land-agent—speaking with reference to several properties of which he has personal cognizance, and which include, in all, over 2,000 tenants, states :—

"The tenant executes all these works chiefly at his own cost, but getting assistance from the landlord, such as slates or timber. He also gets an allowance for sinking drains, and levelling old or making new fences. Trees and thorn quicks are frequently given by the landlord."

And again, he says :—

"I believe the buildings and fences have all been made by the tenants or their predecessors, with more or less assistance from the landlords. Greater assistance would have been given were it not that many of the holdings are too small, being under 10 acres, and also that, under the present system, on sale of the farm, the landlord's outlay would be sold by the outgoing tenant, and the proceeds kept by him."

A fourth correspondent from the same district, speaking as to the result of minute and extensive local inquiries instituted by him at my instance, as to the practice in this respect prevailing in the three unions now under consideration, states :—

"The improvements here referred to are almost invariably made by the tenant at his own cost, and the existing practice in this respect is one of long standing."

I could here multiply testimony to the same effect as that just given, from other equally reliable sources, but what I have already quoted will, probably, be deemed to have conclusively established the fact that, at least as far as this particular district is concerned, it both is and has been the practice of the occupying tenants to execute at their own cost the several classes of improvements in question, subject only to exception as to the partial assistance sometimes given them by the landlords, and the precise custom as to which, no doubt, varies considerably on different, even adjoining estates.

I may here take occasion, once for all, to observe that, as far as planting is concerned, very little of this either is now or ever has been done, as I believe, by yearly tenants, and, where done by leaseholders, ample security is already insured to them by law, through a very cheap and simple process of registration.

I next come to deal with the question of improvements in what I have termed No. 2 division of my district, or the Monaghan, Fermanagh and Cavan portion of it, and in which such diversities of custom prevail upon the subject, that it would be impossible to lay down any one rule as having anything like a general application. Under these circumstances, I think I shall best convey to you a correct impression of the facts as they exist, by quoting fully from the replies furnished to me by some of the most reliable and intelligent of my correspondents in different quarters of the district.

Thus a resident landlord of high standing in the union of Monaghan, and one of the most valuable and intelligent country gentlemen to be met with, either in that or any other county, says :—

"A general answer to this query, if given without explanation, would be 'all effected by the tenant at his own cost,' but the practice on all the large estates which I know of is to assist the tenant. Probably, on no two estates is the practice quite the same. My knowledge on the subject is not minute."

And a gentleman in the same immediate neighbourhood, acting as agent for an estate of about 15,000 acres in extent, and £15,000 in valuation, states, in reply to the same query :—

"Farm-buildings are erected by the tenants. On large farms—say from 20 acres upwards—slates and timber are given, and on farms from 20 to 10 acres, slates only are given by the landlord. On small farms, under 10 acres, the houses, which are generally thatched, are usually erected by the tenant, but assistance is often given by the landlord. Large open drains are always executed by the landlord. Thorough drainage is not carried out to any great extent. The landlord usually allowed a moiety of the expense of thorough drainage, but latterly this allowance was stopped, in consequence of the imperfect manner in which the work was done. Very few new fences were erected within the past 50 years. Assistance is usually given when new fences are necessary. Iron gates are given by the landlord. There is no planting carried out on tenants' holdings—they are too small. N.B.—Tenants are allowed lime at half-price, and are assisted in other ways."

The foregoing statement comes from a gentleman on whose accuracy the strictest reliance may be placed, and it may, probably, be taken as illustrating very fairly not only the practice on the large estate under his own management, but also that of the surrounding district generally.

In the adjoining union of Clonès (situate partly in the same county, and partly in Fermanagh) the resident agent for a very considerable estate says :—

"If a permanent improvement is made on a farm above 10 acres—such as slating a house—the landlord is generally willing to bear half the cost. Drainage—not much done, and almost entirely by the tenant, who is repaid by having the land at an unimproved rent for some time. Fencing and iron gates—little done. Planting—hardly ever done, except by landlord for ornament."

And again he says :—

"I believe the real improvements bear but a small proportion to the so-called improvements made by tenants, as many of them (fencing, inferior houses, &c.) are valueless to the landlord; but I believe the improvements which have been made, have been mainly by tenants, who, however, have been to a great extent recouped for them, by holding the land at a rent lower than the market value."

Other replies from this union put the case more strongly in the tenants' favour, but, substantially, there appears to be no difference

so wide as to render it necessary for me to quote here any further evidence as to the practice in this respect.

In the adjoining union of Castleblayney, one very competent witness of long and extensive experience in dealings with land, and its management, thus describes the practice there :—

"On well-regulated estates the general rule is that the landlords pay for the timber and slates—some only pay for the slates—the tenant pays all other expenses; the drainage usually paid one-half by each; fencing generally by the tenant; iron gates generally by the landlord, sometimes by the tenant, particularly where the tenant has a valuable interest in the farm; planting is paid by the landlords."

Another correspondent, writing from the same union, says :—

"As a rule all these improvements are effected by the tenants without any assistance. On four estates in this union, where tenants build houses of a certain class the landlords assist by giving timber or slates, or both, for roofing such houses. On two or three estates assistance is also given (6*d.* per perch) in draining the land—not much drainage, however, is being done at present. In some few instances gates have been granted, and an allowance for making new and removing old fences. This practice is of comparatively recent date."

And again he says :—

"The estates referred to where the landlords assist in improvements are those of Mrs. Hope, Lord Templetown, the Marquis of Bath, and James Hamilton, Esq., all in this union, and including an area of 28,755 statute acres—Poor Law valuation £16,365.

In the other portions of the union, embracing 65,547 acres—Poor Law valuation £58,081—the tenant makes all improvements himself with scarcely an exception."

In the remaining union of the county Monaghan (Carrickmacross) which belongs, I believe, almost exclusively to two large proprietors, the prevailing practice as to improvements is described as follows, by the agent for one of the estates—a gentleman well known for his experience and ability in the management of landed property; he says :—

"On the Bath estate, comprising one-half the barony of Farney, the building of farm-houses and out-offices is either done by the landlord and tenant jointly—each bearing about one-half of the expense—or exclusively by the landlord. I am not aware, for the last eighteen years, of any house or out-office having been built exclusively at the tenant's expense, unless under a special agreement for a lease, and only a few cases of this nature.

In building dwelling-houses, the usual practice is for the landlord to give slates and timber for roof, doors, and windows, and ridge tiles for roof, free. Sometimes lime also free. The tenant draws these from the town where they are sold, and does the labour work of the building, masonry, and carpentering; all is executed under the supervision, and on the plans and specifications of the Clerk of Works for the estate. Drainage is almost invariably done by the landlord.

There is no reclamation of land going on, except on very small patches of cut-away bog, which are let at a low rate on condition of their being reclaimed. No new fencing has been done for many years past, except enclosure of plantations, which is done exclusively by the landlord. Iron

gates in large numbers are given free by the landlord, and are erected generally by the tenant. Planting is done almost exclusively by the landlord; in a few cases trees have been given free by the landlord, and cut down by the tenant."

And again he says:—

"When the landlord executed the entire work, such as building a new house complete, interest on the money, never exceeding four or five per cent., is sometimes charged, but this is always made the subject of special agreement beforehand. Very often, however, houses are built by the landlord, without any interest being charged."

The gentleman locally representing the other large estate comprised in this union not having answered the queries forwarded to him by me, I regret that I am not in a position to add here, as I should have been most happy to have done, any statement from him upon this branch of the subject, but the following are the answers received by me, as to the union generally, from two highly intelligent magistrates resident in it, and practically conversant with the details of which they treat.

The first thus replies as to this:—

"The landlord generally gives slates and timber. If the drains are approved by the agriculturist on the Shirley estate the tenant is allowed 3*d*. per statute perch towards the expense. On the Bath estate drainage pipes are supplied to the tenants. Gates are given to the tenants on the Shirley estate, sometimes without charge, or at a low price. Planting is all done by the landlord, except hedges, &c."

And again he says:—

"The houses, offices, and fences have nearly all been created by former and present tenants, except as far as assisted by their landlords, where new buildings have been made."

The other magistrate referred to says:—

"In this district the landlord is understood to do nothing—the tenant everything; in practice, however, the landlord has built some houses, assisted in the building of others with timber and slates—this, in cases where farms had been cleared by evictions, was done to induce tenants of a certain class to take and occupy such houses, and in one or two instances where tenants had been removed to other farms for purposes of consolidation.

"Drainage was generally, in fact always, done by landlords under the Land Improvement Act, and the full amount charged to tenants; iron gates given by landlord in a few cases as a matter of favour."

These several statements embody the fullest information I have been enabled to collect as to this union, and though they do not coincide as to all the details involved, little difficulty need, I think, be experienced in deducing from them a sufficiently clear general conclusion as to what the actual practice is.

A resident nobleman whose estate extends, I believe, into more than one union in Monaghan, but lies chiefly in the portion of the county attached to the Cootehill (county Cavan) Union, and who bears a high character as a just and considerate landlord, writes

thus, as to the practice on his own property, and which he believes to be in accordance with that observed in the surrounding district generally.

He says:—

"Grants of money are made, equivalent to the cost of roofing, to tenants building farm-houses and offices, and sometimes for the repairs. Drainage is paid for at about half-price, and iron gates at same rate."

And again he says:—

"Improvements have been generally carried out at the joint cost of landlord and tenant—the largest share being borne by the tenant."

Writing from the same immediate neighbourhood, an able local magistrate, one of the Chairmen of the Board of Guardians, and who is personally well known to me, states—with reference to properties in three surrounding unions, for all of which, I believe, he acts as agent:—

"On some properties allowance is made for drains, and I hear of landlords giving timber and slates—but, as a rule, where improvements are made, the tenant does it at his own expense and risk."

Of the counties classed by me in the same territorial division with Monaghan, Cavan alone now remains to be referred to.

A gentleman acting as agent for two properties in this county, worth about £26,000 a-year, states:—

"The erection of farm-houses and repairs thereof generally done by the tenants. Some drainage done by the landlords who charge the tenants a per-centage on their outlay.

"Some landlords borrow money for this purpose from the Board of Works and make the tenants pay the whole or portion of the interest. In the latter cases, on the Marquis of Headfort's estate, it is permanently added to the rent. In the former it is entered as a separate charge against the farm, to expire when the loan is paid off. It is usual to make allowances for mearing fences, but not for any others. Some landlords supply their tenants with iron gates at reduced cost."

And again he says:—

"On the Headfort estates the improvements are chiefly made by the tenants. Leases for 21 years, or a life, are given as premiums for improvement. Hardly one tenant in eight has reached the standard, but lately there has been no anxiety for leases.

"For various reasons, I believe, this indifference to leases is now general. It used not to be so, but now the tenants expect fixity of tenure."

A nobleman resident in the county Dublin, but having a property in this county, states:—

"My practice has always been to allow my tenants slates, timber, and tiles for repairs and improvements. I am not aware that drainage or reclamation has been carried on to any extent, nor fencing either. The planting has been done at my sole expense."

And again, answering my query as to how far existing improvements on the farms were the creation of landlords or tenants respectively, he says:—

"When an estate like this has been long cultivated, and is not due to modern reclamations, it is utterly impossible to obtain this information."

A gentleman resident (I believe) in Cavan Union, and acting as agent for extensive estates in that county and Fermanagh, says:—

"Where slated houses are put up, the landlord generally gives timber and slates; houses thatched—the landlord generally gives about a third of the cost.

"Where the tenant prefers it, the landlord offers to build all, charging a fair per-centage—this tenant seldom agrees to. Drainage, the landlord has encouraged and executed to a great extent in the last 25 years. Where the tenant drains he is allowed half cost. Landlord has offered to drain portions of any farm, on tenant consenting to pay interest on the expenditure—this they rarely avail themselves of.

"Where tenants are industrious and improving, the landlord often gives iron gates free, and in other cases pays one-half. Planting, except on land in landlord's hands, is rare. Where a few trees are required they are given free, and also thorns for hedges to a large extent. Lime is given to a large extent at half price. Artificial manures have frequently been ordered for tenants, they paying in harvest, after they reap the crops. The above system has been, more or less, for 25 years, and has caused satisfaction and improvement."

A proprietor in the Cavan Union, who bears an excellent character as a landlord, and useful resident country gentleman, thus describes the practice on his own estate, and, so far as he knows it, on the other surrounding properties of his district:—

"On some properties slates and timber are given by the landlord, where the tenant proposes to build a good house and offices. For properly laid-out fences and draining, allowances are in many instances made by the landlord—sometimes for the full amount, but more generally for only a portion of the cost.

"In reclaiming portions of cut-away bog or waste, he is allowed to hold the land so reclaimed, rent free, for 3, 4, or more years, so as to repay him for his labour.

"The houses here, as a rule, have always been built by the tenant, but in some instances allowances have been made for them by the landlord; they are generally built of mud, and thatched.

"The allowance of slates and timber to tenants who build good houses is of recent origin."

And again he says:—

"I should say that the houses and offices, such as they are, were principally built by the tenants; the private roads mostly made by the landlords, or with their assistance; the fences, if properly laid out, in part or in whole by the landlords; and for the drainage on the properties mentioned, considerable allowances have been made to tenants."

In the same neighbourhood, the agent of a resident nobleman says:—

"On the Farnham estate the landlord allows the tenant half the cost for roofing and slating the dwelling-houses. Drainage (arterial) has been done to a considerable extent by Board of Works; but on Lord Farnham's unsettled estate, called Fortland, 4*d*. per perch is allowed to the tenant for drainage. The tenant is also allowed for planting.

"A tenant is allowed for reclaiming land at least 3 years before coming under rent, and has been for some years."

I shall conclude my reference to Cavan with one further quotation, taken from the replies of a gentleman having no connexion with it either as a landlord, agent, or tenant, but who is intimately acquainted with the entire county, and who appears to me to be well qualified by experience and intelligence to judge accurately of what has come under his notice.

He says, as to houses, offices, and repairs of same, &c., &c.:—

"Erected by tenants generally, on the most economical scale. Drainage executed by tenants. Fencing—all done by tenants. Iron gates—farming carried on in such an humble scale in this county that iron gates are seldom aimed at. Planting not attempted.

"The existing practice is of long standing and very rarely deviated from. There are seldom substantial improvements."

And again he says:—

"Tenants are generally left to themselves as to the management of their houses, farms, &c.

In parts near demesnes where timber is plenty and not of much value assistance is sometimes given in order to encourage building."

The instances I have here quoted will probably suffice to convey a sufficiently accurate idea of the general practice that obtains in this county—which appears to resemble the county last treated of (Monaghan) in this, that in both, a custom more or less general appears to have of late years grown up on the part of landlords, of giving in some cases, as described, assistance to tenants in the execution of certain classes of improvements, while they differ both as to the extent to which this aid has been carried, and in the progress they have made in agricultural improvement generally—in both of which particulars Cavan would seem to be still in a somewhat backward condition, as compared with the neighbouring county.

It now only remains for me to deal with the practice as to improvements in the Leinster portion of my district, comprising the entire of Louth, the greater portion of Meath, and one union in the county Dublin.

And 1st as to Louth:—

It has unfortunately happened—whether through accidental circumstances or otherwise I am unable to say—that I have received fewer replies, on the part of proprietors, to my queries from this county, than from any other part of my district; however, I believe that, notwithstanding this drawback, I have obtained fully sufficient practical information to enable me to

convey a tolerably correct representation of the prevailing state of things.

The resident agent for a nobleman living in Ulster, but having a property in the northern extremity of this county, states as to the execution of agricultural improvements generally :—

"Almost in every case made by the tenant, and is of long standing."

And again he says :—

"In cases of small farms the houses and offices have been erected by the original proprietors, who had leases, now expired, but have been continued as tenants from year to year at very slightly increased rents, and who prefer this state, under the impression, that if bad times, such as the famine years, should occur, they would have the advantage of reduction of their rents, which the lease-holder could not expect. In large farms the landlord has assisted in the erection of substantial buildings and reclamation of ground, drainage, &c., for which a moderate per centage has been added, to the rent, in no case exceeding 5 per cent.

Another gentleman, whom I know to be a very competent authority on this subject, and who has had considerable experience as a practical farmer in the county, says :—

"The building of farm-houses, offices, and the repair of same are executed by the tenant—one landlord only, to my knowledge, gives slates gratis; another gives money to the tenant, but charges a certain per-centage, which is added to the rent. One landlord allows the tenant part of his expenditure for drainage, but all others allow the tenants to do so at their own cost. One landlord only, that I know of, allows the tenant part of the expenditure for fencing and iron gates; and one landlord only gives his tenant trees to plant. The above has been the practice as long as I can recollect, say for twenty-five years."

And again, he says :—

"For the most part, the dwelling-houses, offices, fences, roads and improvements of all kinds have been made either by the present tenants or by their predecessors."

The writer of the foregoing answers has specified in them the names of the several landlords on whose estates the customs he has enumerated respectively prevail, but it is not necessary that I should quote them here.

A resident proprietor of this county, who farms also a portion of his own estate, and who is thoroughly familiar with the practice and arrangements prevailing generally throughout the entire of Louth, says :—

"There is a custom pretty general, and growing, for the landlords to allow timber and slates where the tenant does the mason work of buildings—drainage and reclamation of land generally done by the tenant—fences and iron gates done by the tenant. On a few properties iron gates are allowed when piers are built by the tenant, but it is not commonly done. Planting done by the landlord."

And again, he says :—

"The county Louth has a greater number of large farms than is usually found in Ireland; there are in consequence a greater number of substantial

houses and offices also, the more as it is a tillage district. The older buildings, the fences, &c., have been, as a rule, made by the former tenants solely.

"When extensive improvements are now contemplated, an understanding is generally come to, in each case, with the landlord."

The testimony just quoted comes, I may observe, from a gentleman of the very highest character and authority upon any subject as to which he is qualified to speak, which he most certainly is in a position to do in the present instance, and what he has written may, I have no doubt whatever, be regarded as an accurate summary of the general state of things in this county.

And I shall now pass on to the adjoining county of Meath.

The practice upon the several estates in this county varies a good deal, and owing to this circumstance, the replies I have received to my queries differ much, in many particulars, from each other; one gentleman, who is both himself an owner of property, as well as agent for two others in the county, states:—

"On the estates under my management, viz., those of the Earl of Fingall, Lord Gormanston, and my own, the rule is, and has been for the last ten years, that the proprietor contributes at least one-half the expense of building houses, offices, and repairs of same, one-half expense of draining and reclamation, one-half of fencing and iron gates. Planting is almost invariably done at the sole expense of the landlord, and in many instances a further reduction of rent is made for loss of land.

"I am not aware of any such improvement having been carried out on any of these estates for the last ten or fifteen years at the sole cost of the tenant."

In another case, the agent for a resident nobleman says:—

"Assistance is given towards the roofing of farmhouses and offices; no allowance made for repairs. In the county Meath allow for opening drains and give pipes."

A magistrate long resident in this county, of much intelligence and experience, speaking generally of the Kells Union, says:—

"The farmhouses and offices in this county are seldom slated and well built, and have been, with few exceptions, built and repaired by the tenants.

"Anything of good and extensive drainage has been done by the landlord under the Board of Works, and the reclamation of land, which has been very trifling, done in the same way. The fences are done by the tenants, who scarcely ever put up iron gates, and there is no planting by tenants."

And again, he says:—

"Any permanent and substantial improvements that I know of have, in almost every instance, been made either by the present or former landlords."

A resident proprietor in the same neighbourhood, confining himself, however, strictly to his own property, and one particular electoral division, says:—

"Farmhouses are built by the landlords, or, if not built, paid for, in general. The tenants that keep them in good order, do so at their own

expense. Any drainage done is either done at the expense of the landlord, or the expense is divided. No planting done by tenants that I know of."

I shall conclude my reference to Meath with one more quotation taken from the replies of a correspondent possessing excellent means of information as to the subject of which he treats. He says:—

"The building and repairs of farmhouses and offices, the drainage and reclamation of land, the making of fences, erection of iron gates, and planting, are, as a general rule, done by the tenants at their own expense. There are two proprietors in this union (Lord Gormanston and Mr. Hussey) who advance money for building purposes to their tenants at 5 per cent., which per-centage is added to the yearly rents. And one or two other proprietors assist their tenants to build, by giving them, free, a supply of timber and slates. Lord Gormanston allows the tenants half the expense of drainage (say 6*d.* per perch), and supplies them, gratis, with thorn-quicks. Mr. Hussey also allows half the cost of drainage, as well as of fencing, and in some instances gives iron gates free of charge. This has been the practice on these estates for many years."

This description will probably apply, as a general rule, to most, if not all, of the portion of the county of Meath comprehended in my district, subject, no doubt, to numerous exceptions in individual cases, not sensibly affecting the general result, and I shall now proceed to refer to the only county in my district which has not yet been touched upon, namely, Dublin, and which, like Meath, presents in the different estates comprising it, considerable varieties in the existing arrangements which regulate the execution of agricultural improvements as between landlord and tenant.

The agent for a property of about £16,000 a year, a considerable part of which is situated in the union (Balrothery) now under consideration, says as to this:—

"Either altogether by the landlord, or the landlord gives timber and slates; repairs done by tenants; drainage and reclamation—either half the expense by landlord and half by tenant, or all by the landlord, charging 5 per cent.; fencing by tenants; gates given by landlord; planting by tenants. Little or nothing done by tenants for 25 or 30 years to my knowledge."

And again, he says:—

"All real improvements have been made by the former or present landlords. The cabins have been built by the tenant class many years ago."

Another gentleman, agent for an important estate, adjoining the last quoted, says:—

"On the estates that I am concerned with, timber and slates are allowed for farm-buildings, &c., by the landlord. This practice is of some years standing."

A resident proprietor, well known for his kind and lenient treatment of his tenants, says—speaking, however, exclusively of his own estate:—

"Almost all buildings and repairs of farmhouses and offices, and particularly the roofing with slates, arterial drainage (not under the Board

of Works), and reclamation of lands, have been executed by landlord. Tenants have made in some few instances minor drains. The practice is not of recent origin."

And again, he says:—

"In some instances, where there has been a large expenditure by landlord, interest at 5 per cent. per annum has been added to that reserved by lease, and this with consent of tenant. In the case of yearly tenants, such has not been done, and except where a new tenant has come into occupation of a farm, no increase of rent has been made, and never to a large extent."

A most intelligent magistrate, who has been for some years a resident of this union, where he is actively engaged in farming operations, and who possesses a good general knowledge of the state of things about him, says:—

"The building of new farm-houses and offices is of very rare occurrence; the landlord generally contributes towards the expenditure. In some cases the entire expenditure is borne by the tenant. The same remarks apply to extensive repairs, such as roofing, &c.

"The amount of drainage executed is not at all in proportion to the extent of land requiring it. In most cases the tenant drains at his own expense. A few landlords have borne a share of the expenditure, either by allowing a portion of the outlay, or advancing the money and charging the tenant a per centage on the loan. The tenant fences and erects iron gates at his own expense; planting—nil."

And again he says:—

"I am of opinion that the greater amount of important improvements, such as drainage, fencing, &c., have been carried out by the former or present tenants."

Another correspondent, who has no direct interest in this question, whether as landlord or tenant, but who by residence, pursuits, and intelligence, I regard as a *particularly* reliable authority as to the exact state of facts in this district, and which come, extensively, under his almost daily observation, says:—

"The prevailing and average practice is, that landlords build and improve their tenant's offices, and charge 5 per cent. to their tenants for the outlay. There are exceptions to this prevailing rule. Some landlords supply slates and timber gratis, and others make no charge for improving or building the farm-houses of tenants who are widows (the names of such landlords I can supply, if necessary).

"Houses are only built on farms ranging from 15 to 45 acres. The tenants themselve make, at their own cost, as a general rule, all reclamation on the land, as also that of fencing and erection of gates, and, unless by special agreement, that of planting."

This concludes my observations on the first and most important topic referred to in the Chief Secretary's letter, and though I have been under the necessity of dwelling upon the details connected with it at very great and perhaps even inconvenient length, I believe that, without doing so, it would not have been in my power to have presented to you anything like a clear or satisfactory solution of the question I proposed to myself in the early

part of this Report, namely, as to how far the general practice as to the execution of improvements upon farms, which it has been assumed by me prevailed in Ireland up to the famine, has been, since then, modified or altered either in the whole, or any particular part of the district under my charge.

Varying so much in several particulars, as it has been seen, the general practice does, not only in the different provinces and counties just referred to, but even upon neighbouring estates, it would not be possible to attempt here adding anything like a short summary of what I have written; but what the average condition of things is, in the respective districts which I have separately described, can be readily gathered from an examination of the lengthened extracts given from the large mass of correspondence now in my possession, and in the selection of which my object has been to place before you, in the clearest and most succinct shape I could; the views and statements of those who appear to me to be, upon the whole, the best and most authoritative representatives of the various conflicting interests involved in the solution of this question.

II.—Tenants' Security for Improvements.

I next proceed to refer to the question as to—

What security the tenant has, by custom or practice, for the value of any of the foregoing improvements, effected by him at his own cost; either, first—by guarantee or understanding that he will receive a fair proportion in the event of eviction or surrender; or, second—by guarantee of undisturbed enjoyment of his improvements for a certain definite period.

A general answer to this question must be that, as things now stand, yearly tenants at least, have no guarantee or specific understanding, of any sort, that the value of any improvements effected by them will be either in whole or part repaid to them, in the event of eviction or surrender; or that, in consideration of them, they will be permitted any definite period for the enjoyment of what they have done.

Where the Ulster tenant-right obtains, the tenants indirectly possess, by virtue of that custom, what may be regarded as involving a very substantial security for this; where it does not prevail at all, or only in a restricted sense, the sole security they possess consists in their confidence that, as long as they pay their rents, they will not be disturbed—a confidence which, I am bound to say, so far as my experience has extended, is, as a general rule, very rarely disappointed—at least in the case of any of the large and well-managed estates of the country.

In cases where portions of cut-away bog and waste are reclaimed by tenants, it is, however, a very common practice for them to stipulate with the landlords that they are to be allowed the free use of the land so reclaimed for a given period of three, four, or five years, as the case may be.

Beyond what I have stated here, I know of no guarantee enjoyed by tenants in any case as to this, save that conferred by the possession of a lease, where it exists.

III.—Increase of Rent on account of Improvements.

Q. "Whether it is the practice to increase the annual rent in consequence of improvements effected either by landlord or tenant?"

One part of this question has, I think, been already sufficiently answered by the extracts I have given in connexion with the first head of inquiry in this Report, as it has been there shown that it is a common practice, where substantial improvements are effected by the landlord, to charge the occupying tenants a percentage on the outlay, which is usually added to the annual rent; this, however, being invariably a matter of specific agreement beforehand between the parties. And where improvements are effected by tenants, at their own expense, I may add here, it is CERTAINLY NOT the usual practice on any well-regulated estate in my district to increase the annual rent *in consequence* of these, except upon the expiration of leases, when it is, at least in many places, quite a general thing to do so.

IV.—Tenants Losing altogether the Value of their Improvements.

Q. "Whether there are many instances of tenants losing altogether the value of improvements effected at their own expense through (1st) eviction, or (2nd) disproportionate increase of rent?"

The eviction of a tenant, save for non-payment of rent or some other good and valid reason, is, so far at least as my district is concerned, a thing, I may say, now rarely heard of; and, as regards the second branch of the inquiry, as to the total loss of the value of improvements effected by tenants through disproportionate increase of rents, I think I may add that this, too, is, under ordinary circumstances, a very unusual occurrence, except where it arises, as there is no doubt it very often does in practice, under the operation of some one or other of the three following classes of causes, viz :—

1. Where there has been a recent change of ownership in the property, and notably where this change has resulted from the division of a large estate (as under a sale in the Landed Estates Court) into several smaller ones. In cases of this kind, complaints are frequently heard of tenants being deprived, either wholly or partially, of the value of improvements previously effected by them through the exaction of greatly increased rents on the part of the new owners, who are very commonly traders, shopkeepers, or other small capitalists, purchasing merely as a mercantile speculation, and with a view to realizing the highest possible interest on their investment.

It would not be practicable to give, within the limits of an

ordinary report, all the instances of this which have, from time to time, been communicated to me. One, however, I may quote as an illustration of what is, I fear, a not very uncommon occurrence at the present day.

A gentleman of reliable character, in answering my queries, details the following case as having occurred to a respectable, industrious, and improving tenant, residing near, and well known to him :—

"——— improved a farm of land of about 22 acres; it was in a wretched condition when he got it; he drained it, made large fields, &c., and the landlord (who acquired the property by purchase in the meantime) raised the rent from £39 to £50: the Poor Law valuation of this property is £30 10*s*."

A correspondent, on whose information strict dependence can be placed, says, on the same subject, writing of a wide district, comprising portions of the counties of Down and Armagh :—

"The rents, as a general rule, on all large estates are seldom more, even for good land, than from 17*s*. 6*d*. to 20*s*. per statute acre, but on nearly all the small properties they are from 25*s*. to 30*s*., and in some instances 40*s*., per statute acre."

He also says :—

"On some other small properties the rents have been considerably increased of late."

And again :—

"I found the agents of all the large properties quite willing to give me any information asked for with respect to leases, and the amount for which tenant-right usually sells under them; but several small proprietors and their agents did not appear disposed to give any information."

The representations made to me as to this practice on the part of recent purchasers, and of the owners generally of small properties in my district, to increase their rents in this way, beyond what is either reasonable to the tenants, or in accordance with the custom of the country, have reached me from so many and such reliable sources in totally different quarters, that I can entertain no reasonable doubt the complaints made on this head must, in substance at least, have considerable foundation in fact.

In further confirmation of this, I shall give one more extract from the replies of the correspondent already quoted. He says, speaking still of Down and Armagh :—

"The amount paid for tenant-right on the extensive estates is always higher than on small properties; the reason is, that the rents are lower, the tenure is considered more secure, and the rents are less likely to be raised."

2. The second class of cases referred to by me, and in which the necessary tendency, as it appears to me, must be to absorb ultimately, either wholly or in part, according to the circumstances of each estate, the value of the improvements made by

the tenants on their farms, is to be met with on those properties where it is the established and recognised practice to make periodical or other revaluations of the rent, and re-arrange it, *without* making any special deductions in the cases of individual tenants, for the improvements effected by themselves.

There is, I may observe, much diversity of general practice, as to this subject of increasing rents, on most of the large estates throughout my district.

On some no periodical revision ever takes place, nor has any increase been made in the rents paid for many years past, except, perhaps, on the fall of a lease, or a change of tenancy, &c.; while in others, though such a revision is sometimes made, it is done subject to no fixed rule either as to time or amount. Some proprietors, again, when ordering a new valuation, authorize special exemptions, in individual cases, for tenants' improvements.

The fullest information as to the rule observed upon this subject, in any particular instance, that has reached me, comes from the agent for one of the large estates in the county Monaghan, and to whom I have already had occasion to refer:—

"The rule of the estate has long been that a new valuation should take place every 20 years, and the tenant does whatever he does subject to this well-understood, though not written, lease; large sums are given for tenant-right on this understanding.

"The estate was recently revalued after 30 years, the revaluation having been delayed 10 years on account of the famine; and, though the prices of agricultural produce have almost doubled in that time, yet the estate was only raised $7\frac{1}{2}$ per cent."

Again, he says:—

"I may mention here, that immediately subsequent to the revaluation I allowed unlimited scope for a couple of years to the principle of tenant-right, for the purpose of testing whether the lands had been too highly valued or not; and in the few cases where changes of tenancy took place, sums varying from £10 to £15 and up to £18 per acre were given for land subject to the increased rent—£12 to £13 per acre being the usual average. There were, however, very few changes."

3. The third class of cases I have referred to, where the value of improvements is either wholly or partially, sometimes lost to tenants, is where they have been made, as they every day are, upon the security of terminable, and often of very short leases.

A magistrate resident in the county of Meath, an experienced practical agriculturist, and one of the Chairmen of the Board of Guardians of the union in which he lives, has forwarded to me, with his replies, the particulars of two striking illustrations of this, known to himself, and which I will here take leave to quote in full. He says:—

"I know a farm of 300 acres let to two tenants, about 150 to each, at 30*s.* per Irish acre, for 21 years.

"At 18 years A ploughed his part up, and took his improvements out of it; B, trusting to landlord's honour, did not. At the end of the 21 years the valuers were sent down, who valued them in their then state, and A got his part for another 21 years at 25*s.*, but B was charged 35*s.*"

Again, he says :—

"Another A gave £70 for a farm of 20 acres at 27*s.*, lease 6 years to run with the consent of landlord, who promised to give A a renewal; the farm was in very bad order, and A laid out about £200 in improvements. At the end of the 6 years the landlord refused a lease, but raised the rent to 40*s.*"

V.—Increase or Diminution of Agricultural Improvements.

Q. "Whether agricultural improvements are on the increase or declining at the present time."

Though some of the replies received by me on the above head represent things as stationary at present, owing to various alleged causes, such as the expectation entertained of extensive changes in the land laws, and others describe them as being even on the decline, owing, as stated, to insecurity of tenure, want of capital, apprehension of increase of rent, and other causes; yet the great preponderance of the testimony furnished to me on this occasion is to the effect that agricultural improvements generally, and of various kinds, are decidedly extending—though many correspondents express the opinon (I have no doubt a well-founded one), that much room still exists in many places for the beneficial application of capital in the promotion of works of drainage, reclamation, &c.

I may add that, so far as my experience and observation have extended, and enabled me to form a judgment upon this subject, I have no hesitation in expressing my conviction that the general progress made in this respect, since the famine time, has been considerable, and is of a substantial and permanent character.

Taking the interval that has passed since that occurrence as a whole, I should say, as the impression derived by me from a constant visitation of the country districts generally, that the first half of that period, or probably somewhat more, was chiefly distinguished for the great activity displayed in pressing forward the larger and more important classes of work, such as drainage, reclamation of land, &c., &c., and that the last ten years have been, perhaps, more remarkable for the increased attention paid to less striking descriptions of improvement, and especially for the gradual introduction of better systems of culture, as well as, in many localities at least, for the disposition which has been developing itself, on the part of farmers, to create, by degrees, a superior description of dwelling-houses and offices, &c., to that which their predecessors were usually content with.

This latter class of improvement, however, I should observe, is far more conspicuous in some districts of the country than others —in many of which, I regret to say, the general condition of things, as to this, still remains in a state of extreme backwardness.

VI.—Notices to Quit.

Q. "Whether notices to quit are of frequent occurrence, and if so, whether they are generally followed up."

It seems hardly necessary, as far as my district is concerned, that I should dwell at any great length upon the subject of notices to quit.

The precise degree of frequency of such notices is, no doubt, somewhat variously represented in the different replies to queries received by me; but nearly all my correspondents, concur in representing that, as a general rule, they are only served either for persistent non-payment of rent—to adjust quarrels amongst families or neighbours—with a view to the squaring of holdings —to prevent the burning or other improper treatment of land, or some other equally reasonable cause, and almost all agree that where this cause is removed, it is altogether unusual to follow up the notice by the eviction of the offender from his holding.

One correspondent, however, a Magistrate for one of the northern counties, while frankly admitting the extreme rarity of such occurrences in his district, appends to this a statement which, coming from such a source, I do not feel it right to withhold here. He says:—

"No tenant is almost ever actually removed. The want of security in his holding, however, is a whip held over him in every act of his life, from the killing of a hare to the giving of his vote at an election."

This extract, short though it be, seems to me to express and embody in a few words the gist of the complaints which have reached me, upon this point, from many quarters. It is nowhere, so far as I know, pretended, nor could it with truth be so, at least in any part of my district, that tenants are in the habit of being arbitrarily and without proper cause subjected, in fact and practice, to the process of eviction.

All that is alleged as to this, on the part of tenants, is that they live under a constant liability to be so, and that the fear of this on their parts, and the possession of the legal power to effect it on the part of the landlords, operate as a restraint upon personal freedom in all the concerns of their everyday life, whether social, agrarian, political, or otherwise.

The foregoing extract expresses the hardship of the case as it presents itself to the mind of the tenant-farmer; but, as an illustration that the present state of things can hardly be regarded as being at all more satisfactory from the landlord's point of view I shall close my observations on this branch of the subject with a further extract, taken from the replies of a gentleman of position and intelligence, and who acts as agent for two large estates in another of the Ulster counties.

This gentleman, replying to my inquiry as to whether notices to quit were of frequent occurrence, says:—

"Notices to quit are very rare, except for non-payment of rent; but many landlords would eject, with a view to consolidation, dealing liberally with the ejected tenants, but they are prevented by the fixity of tenure, which has been established by the Ribbon blunderbuss."

VII.—Tenant-Right.

Q. "*Whether the Ulster tenant-right custom is in existence, and, if so, first—whether it is confined to tenants-at-will, or extends to leaseholding tenants; second—whether it can be defined, and a value set upon it at so many years' rental, or at so much per acre; and third—whether it is spreading and gaining ground.*"

And first, as to the existence of the custom, that is—whether any payment is made to the outgoing tenant, with or without the consent of his landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the tenant or preceding tenants.

The general answer to this inquiry is, that in the north-eastern section of my district, already indicated in this report as No. 1, this custom does, almost, though not quite, universally prevail, and is firmly established and recognised in one form or another; for, in practice, I may observe, the Ulster custom assumes several forms, and presents many diversities, which, in the proper place, will be explained in detail.

In No. 2 Section (Monaghan, Cavan, &c.) it also prevails, and is generally, though by no means universally, recognised; but here its hold, as an established institution of the country, is far weaker, especially in Cavan, than in Down, Armagh, &c. Here it is altogether of a more modified and permissive character, and is subject to much greater control and restriction than in the more northern counties.

In No. 3, or the Leinster Section of my district, I may say the name of tenant-right is almost entirely unknown, and the thing itself, too, at least as it exists in Ulster, is nearly equally so; but tenants are frequently permitted by their landlords, not, however, as a matter of course, or of right, but of favour, to part with their interest in a farm to some other tenant, approved of by the landlord, or to receive from a successor, selected by the landlord himself, a sum of money for their good-will, properly so-called.

In no instance, either in Leinster or Ulster, is any tenant permitted to transfer his interest to another until the name of the latter has first been submitted to, and approved of, by the landlord; and, ordinarily, either the landlord or the agent is, I have no doubt, fully aware of the precise amount paid. It is, however, I believe, certain, that in the now numerous instances in which landlords find it expedient to impose a definite limit to the compensation to be paid to the outgoing tenant, this is constantly evaded by a secret understanding between the contracting parties.

How far the payments made to outgoing tenants, under the operation of this custom, are for improvements actually made by them or their predecessors, or how far they are for mere disturbance or good-will, is one of those things as to which it is impossible to pronounce decisively.

I recently passed some days in the county Down, in the prosecution of inquiries made with a view to this report, and

some of the very best authorities in the county on the subject informed me, that it was a matter of common occurrence to find parties there willing to pay the maximum price of tenant-right for holdings on which there were not only no unexhausted improvements remaining, but where the land had been, on the contrary, impoverished by bad usage, and the buildings, &c., entirely neglected; on the other hand, in numerous other cases—certainly, I should say, in by far the majority of cases—such improvements, and the condition of the farm and buildings, do form an essential element in determining the amount of the purchase-money.

Where the custom prevails it is, as a general rule, allowed to apply equally to leaseholders and tenants-at-will, but to this general rule there are exceptions.

Thus, a gentleman already referred to, and quoted as an extensive land agent in the southern extremity of Monaghan, says, as to this:—

"It is confined to yearly tenants; in the case of leases it has been claimed but not granted."

And another extensive agent in the county Cavan, also already quoted, says:—

"A lease would generally be considered as a bar to the custom, particularly where there are clauses against subletting."

While, on the other hand, a magistrate already quoted, as resident in the county Dublin, and familiar with the general practice about him there, says:—

"Leaseholding tenants only (and not as a general rule) are permitted to sell their interest in their farms."

The cases coming under these heads, however, are not, I apprehend, very numerous, and the common rule I take to be that, wherever the right is allowed at all, it is customary to permit both leaseholders and tenants-at-will alike to avail of it.

Where the custom regularly prevails it can be defined, and a value set upon it to this extent, viz.:—that the amount is always calculated, either at a certain number of years' rental, but far more generally at so much per Irish acre. The amount per acre paid, however, varies so much under different circumstances—which will be hereafter explained—that to attempt here any general definition of it would be impracticable.

Where the custom only takes the partial form already described as being in force in the Leinster counties of my district, it cannot be defined at all. There it would depend, in the case of a leaseholder, on the number of years to run, the state of the farm, the character of the landlord, and the probability of satisfactory terms being come to with him, on the expiration of the lease; and, in case of a tenant-at-will, it would, probably, not ordinarily amount to more than a very moderate sum, barely sufficient to insure (in its literal sense) the good-will

of the outgoing tenant, a thing, in Ireland, which is always much and earnestly desired.

The last question connected with the subject of tenant-right—namely, whether it is spreading and gaining ground—is one, the answer to which is by no means free from difficulty.

As far as the tenants are concerned, the desire to acquire land, on their parts, and to pay for the acquisition of it a price that must be very often pronounced excessive and even extravagant, is certainly not now on the decline; on the contrary, as the value of land has recently advanced, as a rule, more rapidly than rent has, I am inclined to think that the general tendency of things at the present moment is decidedly in the other direction; but, as far as the landlords are concerned, the case seems to me to rest upon an entirely different footing.

It is unquestionable, I think, that the result of the experience landlords have had in Ulster of the practical operation of the tenant-right custom, has been to render them, generally speaking, more or less adverse to it.

They have, no doubt, enjoyed under it the indisputable advantage of having their rents always secured to them, all arrears being invariably, and as a matter of course, deducted out of the purchase-money; but, notwithstanding the great convenience and advantage accruing in practice to landlords from this arrangement, I think the general feeling now is, and is daily growing stronger, that the countervailing drawbacks are of a nature which more than outweigh these.

As a matter of fact, it usually happens that the tenants in Ulster who dispose of their holdings are those who have become embarrassed in circumstances, and have impoverished and exhausted their land—of course, land so circumstanced always requires, on the part of the new tenant, a good deal of special outlay to restore it to proper condition; and this, a tenant who, in his greed for mere possession, has paid an exorbitant sum—often procured by him on loan—for the good-will of his predecessor, is not in a position to undertake. Another objection entertained to it is, that as the amount paid for tenant-right is, in effect, neither more nor less than an additional rent, its practical operation is to depress that to which the landlord is entitled, and to prevent him from, at any time, making such a reasonable increase in the amount of it as the circumstances of the country, or of any particular case, might otherwise often fairly warrant.

I fully believe—and in saying this I express not only my own individual opinion, but also that of persons far more competent from experience and otherwise, to speak on the subject than I can pretend to be—that there is at this moment a growing conviction on the part of some, at least, of the most enlightened landlords in Ulster, that, IF IT COULD BE ACCOMPLISHED WITHOUT DOING INJUSTICE TO THE TENANTS, it would be desirable to get rid of the tenant-right custom altogether; but as this is, of course, known and felt to be a PRACTICAL IMPOSSIBILITY, and likely always to continue so to be, the feeling I have described has taken the shape of leading

from time to time, to the adoption on the various large estates of special codes of regulations, often differing from each other a good deal, but all directed to the common purpose of acting as a palliative of a recognised evil.

To some of these restrictive regulations I shall now take leave to refer.

The price paid for the possession of land under the custom at the present time in my district may be said to range from £5 to £25 per Irish acre, rising occasionally, in individual cases, to an amount even much beyond this.

A gentleman acting as agent for an important estate near Newry, and whose valuable replies to my queries afford abundant evidence of his thorough knowledge of this entire subject, says:—

"The tenants obtain from £10 to £25 (per acre) for the simple possession, irrespective of improvements, and I have known as much as £33 being offered per acre for three acres of third-rate land, the rent of which did not exceed 12*s.* per acre; so great is the greed for land on this estate."

The higher of the two amounts (£25) here mentioned may be taken as representing the maximum price usually paid on large estates where the rents are moderate, the character of the landlord good, and no restriction enforced as to amount of purchase money, the average price, under such circumstances, being probably about £15, or £18 to £20; and the lower amount (£5) may be regarded as representing the limit prescribed in the most stringent of the cases in which a definite maximum has been fixed by the landlord.

On one nobleman's property in the county Armagh, I am informed as follows:—

"The tenant-right is limited to £5 per acre, with an allowance sometimes for buildings. Formerly tenants were permitted to sell their holdings for three or four times that amount.

"New tenants have to give in proposals stating the rent which they are willing to give, in addition to paying a deposit of £5 per acre, or the amount allowed to the previous tenant. An increased rent is generally obtained in this way, as the competition for land is very great in this part of the country."

In the adjoining county of Monaghan the agent for a very extensive and important estate explains his rule to me to be as follows. He says:—

"On this estate the usual custom is, when a tenant is evicted, or surrenders his farm from being heavily involved, £5 per Irish acre is paid from the office on the holding being surrendered; out of the sum paid the arrear of rent due to the landlord is deducted, and the balance handed over to the outgoing tenant, but where the outgoing tenant is in miserable circumstances, he receives the £5 per Irish acre in full, the arrears in this case being lost to the landlord."

And again, he says:—

"The tenant getting a vacant farm pays into the office the amount allowed the outgoing tenant, except in cases where arrears are forgiven (when he pays the £5 per acre actually paid to the outgoing tenant), but no direct

transaction takes place between the parties, as the farm must be given up, and the outgoing tenant settled with before any dealings take place with the incoming tenant."

A nobleman already referred to as owning a large estate in the same county (Monaghan), explains his rule to be this, viz.:—

"My rule is, that £10 an acre (Irish) is the maximum price permitted, and that includes good-will and all improvements."

A gentleman, of much authority on the land question, in all its bearings, says, writing from the county Down:—

"In one large estate in this county, of £12,000 a year, when a tenant is evicted for non-payment of rent, or where he agrees to dispose of his farm, owing to his being unable to pay his rent, the landlord sends a farmer competent to value the holding, and he puts a value upon the interest of the tenant in the holding. This value is arrived at on a consideration of the value of the soil and of the condition it is in; but seldom, indeed, if ever, has he to value improvements—in fact, the value he puts upon it is for tenant-right or good-will.

"The incoming tenant and the valuator are always previously informed as to whether there is to be any change of rent on the transfer of the farm. On this estate I never knew any dissatisfaction expressed."

Having now endeavoured to explain both the amounts ordinarily paid for tenant-right on those estates where no restriction as to price is enforced by the landlord, and having also given illustrations of some of the different forms in which landlords have sought to control the operation of the custom, I shall conclude by adding here a copy of a code of regulations in force upon an extensive property situated in the counties of Down and Donegal, belonging to Mr. Stewart, of Ards, and which, while aiming, as they expressly profess to do, at imposing some limit upon the exorbitant prices already referred to as constituting the evil element of this system, are, at the same time, framed in a spirit of generous consideration for the tenants' interests, which appears to me to entitle them to a position of peculiar prominence in the discussion of this question.

The following is a copy of the Rules in force on the estates of Mr. Stewart, of Ards (counties of Down and Donegal):—

"1. When a tenant wishes to leave his farm, either from inability to pay rent, or other reason, the next tenant gets the first offer—the price to be settled by arbitration. This prevents the exorbitant price that would otherwise be asked, and in many cases be given by strangers, and at the same time promotes enlargement of farms.

"2. Should the adjoining tenant be unable to pay for the farm, sometimes his landlord helps him, the money so advanced being refunded by instalments, or an addition is made to the rent of 5 per cent. on sum advanced.

"3. Should next tenant be unable to buy, nor be such a man as it would be desirable to assist, then a stranger may have an offer of the place, he being approved of by Mr. Stewart, and price to be settled by arbitration.

"4. Mr. Stewart guarantees he will not raise the rent, or have his property revalued oftener than 21 years.

"5. If a tenant be evicted for non-payment of rent, he is allowed 6½ years of rent of his holding, but out of this all arrears are deducted.

"6. If a tenant's farm be required to add into demesne, Mr. Stewart gives as much to the outgoing tenant as if he (Mr. Stewart) were a stranger, *i.e.*, about 10 years of the rent, or he gives a better farm elsewhere, and builds all houses himself, setting all at a fair value.

"(Signed),

"ALEX. J. R. STEWART
"(of Ards).

"Dec. 20, '69."

From inquiries made by me from Mr. Stewart himself, and his agent—from both of whom I experienced the most courteous readiness to afford me any information I desired—I learn that these regulations have now been for many years in force upon the estate; that during that period they have been found to answer well in practice; that the court of arbitration provided for by them is composed of two persons, one appointed by the outgoing and the other by the incoming tenant, and that where they differ—which rarely happens, I believe—they usually appoint as umpire the agent of the estate.

I have stated that the general, or at least the very common feeling of landlords in Ulster is daily becoming stronger, so far as I have been able to ascertain it, and as the result of their practical experience, in favour of imposing limits, more or less stringent, upon the exercise of tenant-right.

Let me now add that an equally strong feeling appears to prevail amongst the tenant class of this province in favour of a legal sanction and security for their rights.

All the best informed correspondents, who have favoured me with replies to queries, concur in representing that there is no one circumstance which so sensibly influences the amount paid for the good-will of outgoing tenants as the character of the landlord concerned—which, as I understand it, is neither more nor less than a practical expression of the strong desire entertained, and the necessity felt for obtaining in this indirect manner, that which the law does not confer, namely, SECURITY that the amount invested by them shall not be liable to absorption, subsequently, by an unfair increase of rent, or otherwise.

As I have already stated the amount paid for tenant-right is, in effect, a second rent, and it is thus clear that, under the existing system, good and considerate landlords are practically subjected, in this way, to a heavy penalty for the characters they enjoy.

It is, of course, as might naturally be expected, from the tenant class or their friends, that this expression of desire for security is at present chiefly heard, but as evidence that the feeling is by no means confined to them, I shall now take leave to add one or two short, but very important extracts from amongst many communications on the point.

A resident landlord in the county of Monaghan—the Chairman of the Local Board of Guardians—and one who, I believe, personally discharges in an admirable and considerate manner all

the duties of a proprietor and country gentleman in his neighbourhood, of which he is one of the principal persons, says:—

"It appears to me that the Ulster tenant-right might be legalized to a certain amount, without interfering with the rights of the landlord as at present exercised. This would prevent a capricious or unfair landlord from doing what a considerate one would not do, and where so large an amount of property is invested it seems but right that there should be some legal security.

I need not enter into the numerous cases where the occupiers do not at present claim tenant-right, and which ought to be excepted from any general law."

I may explain, as giving point to what he has stated, that the writer of the foregoing opinion is a gentleman in no way identified with the popular party in this country, as regards matters of political sentiment, &c.—on the contrary, I should say his leanings are all very strongly in the opposite direction.

As another illustration of the growing prevalence of the opinion just quoted, I shall give now an extract from the answers of a Rector of a very important parish in Ulster, and who, to a university career of the *very* first distinction, has superadded the advantage of having acquired some twelve years' practical experience as an active working clergyman in two extensive parishes of the province. He says:—

"It is most desirable, in my opinion, that there should be a Board of Valuators in every neighbourhood—with a right of appeal to a central Board—to determine rental between landlord and tenant, and to define, in the case of outgoing tenants, the tenant-right per acre, according to the circumstances of the farm vacated.

The existence of such a Board would, I believe, create an immediate feeling of security, and tranquillize the farming classes, in due time, permanently."

And he adds, in a note to me, transmitting his answers:—

"Certainly everyone must wish God speed to the effort to legislate wisely between landlord and tenant."

As in the preceding case, and for the same reason, I may observe here, too, that the gentleman from whom this decided expression of opinion has emanated, is by no means one whose general feelings or sympathies can be regarded as having a tendency towards the popular aspect of affairs—very much, I should say, the reverse; but I am aware it conveys the conclusion maturely arrived at by one who has been enabled to bring to the consideration of the question a highly cultivated and unbiassed understanding, aided by a thorough practical acquaintance with the subject on which he speaks.

Though I purpose confining myself here to the two quotations I have just given, with reference to this subject, I may, perhaps, be permitted to add, as the result of my own rather frequent intercourse with the inhabitants of the province, that it appears to me an impression is very generally gaining ground, amongst the very best and most intelligent proprietors in it, that, in reality, their interests are nearly as much bound up as those of

the occupiers in this question of providing legal security for the just rights of the tenant—for, the great evil of the existing system being admittedly the extravagant rate of purchase which has now been very commonly attained to under it, and this having, as has been shown already, resulted, in a very great measure at least, from the anxiety of purchasers to obtain, in the personal character of their landlord, a security for their investment, not otherwise open to them, it is felt that with the removal of this cause the evil complained of would also not certainly disappear altogether, but, at all events, be greatly diminished—a conclusion which, it seems to me, very few reasonable persons will be inclined to dispute at the present day.

VIII.—Dowers, &c.

Q. "Are dowers, or portions for younger children, &c., ever charged by tenants-at-will upon their temporary occupations?"

In every part of my district this practice obtains, to a greater or less extent, but chiefly in the two Ulster divisions of it—in both of which it appears to prevail much more widely than I was at all prepared to find.

I have had the advantage of obtaining the result of the judicial experience acquired as to this by the Chairmen of Quarter Sessions for the counties of Armagh and Down respectively.

One of these gentlemen states :—

"I never met an instance of a tenant attempting to make a direct charge on his land held at will; but tenants often make a provision for their widows, or unmarried daughters, or other near relation, by bequeathing part of the house and a small sustenance for life out of the land, or by leaving the farm to a son on condition of paying small pecuniary legacies to such relations—the effect of which is, that if the son holds the land so bequeathed long enough to realize assets out of its profits, or realizes money by its sale, he is obliged to pay or satisfy these provisions."

The Chairman for the county Down says :—

"Provision for the widow and younger children is generally made to some extent by the tenant-at-will, particularly if the holding be a valuable one."

An eminent solicitor, possessing a long and intimate practical acquaintance with the affairs of the county Down generally, says, as to this :—

"Dowers and portions for younger children are frequently charged by wills of tenants from year to year on their farms.

"The landlord does not recognise such charges; but in many cases the legatees proceed for recovery of them, and get payment of them, in cases where the tenant's interest in the farm will, under the regulations of the estate, sell for as much as will pay them."

The following statement, extracted from the replies of an able agent for an important estate in the neighbourhood of Newry, already referred to in this Report, conveys a forcible picture both

of some of the causes and consequences of the practice in question. He says:—

"This is the most fertile source of inconvenience to us, and of the extreme bitterness of family feuds.

"The small farmer, unable to provide labour, calls upon his children to assist and do the labour of the farm. His only means of remunerating them is to divide his farm, and charge the occupants with portions to sisters and younger children.

"The children are thus sent to labour early, instead of being sent to school. It is impossible to prevent this sub-division of farms above 10 acres, and very often under that area, without running counter to the universal feeling of this district."

In some instances I learn landlords not only countenance this arrangement, but even interpose, to see that effect is given by the inheritor to the disposition so made by his predecessor in the holding; in other cases they strongly oppose themselves to it; but the ordinary rule I take to be that they fully recognise the evils of, and objections to, the system, but, being powerless to avert them, they simply regard it with passive dislike.

In addition to the evils pointed out in the extract last quoted as resulting from this practice, namely, sowing dissension in families, and withdrawing children prematurely from school to labour. I may observe that there is this further very serious objection to it, viz., that it operates, as regards the inheritor, precisely as the extravagant price paid for tenant-right does in the case of the purchaser of a farm; that is, it saddles him, at the outset, with a fatal incubus, the existence of which must greatly militate against the proper cultivation of the land, by depriving him of the capital necessary for that purpose, and unless, as sometimes happens, he has the good luck of escaping from this difficulty by obtaining a wife with a fortune, it is clear the practical effect must, ordinarily, be to drive him either to raise the money by loan, at a ruinous rate of interest, on the security of his tenant-right—a thing sometimes, but not always, practicable—or else to abandon his position altogether, by the sale of his interest—a result which, I believe, frequently accrues in practice.

IX.—Manufactures.

Q. "*Does manufacturing industry, either on a large or small scale, prevail—meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of any sort—and if so, to what extent?*"

I shall first refer to the larger class of manufacturing industry contemplated by this inquiry.

This does prevail within my district, to a considerable extent, but its operations are confined to a few particular localities.

In the section of my district heretofore designated as No. 1 (Armagh and Down, &c.), there are at present in or near Newry 5 factories, employing, in all, 4,055 hands, viz., that at Bessbrook 3,300, and 4 in Newry 755. And of the hands so employed, I learn that, as far as it can be ascertained, about 25 per cent. of

the number are the sons and daughters of small farmers in the neighbourhood.

At Keady, in the Armagh Union, there are now in working order 7 factories, employing between them 1,347 hands at the present moment.

In the case of this latter district (Keady) the subject is thus referred to by two of the correspondents from whom I have received answers to my queries.

One, a member of the Legislature, says:—

"There are two lakes in the mountain part of the property in which there is a large quantity of water locked up during the winter season, and flows down through the property. These drive many spinning, weaving, bleaching, dying, beetling, and other mills, and give employment to a large proportion of the people of the neighbourhood.

"There is also a large quantity of turf to be carted home, and coals from Armagh, which gives employment to the horses and carts of those who consider themselves above the class of mill-workers."

The second correspondent referred to, states on the same subject:—

"Manufacturing industry prevails here to a great extent, viz.:—flax and tow spinning, weaving, bleaching, flax-scutching, paper-making, &c.

"Were it not for the manufacturing industry and consequent employment and circulation of money, this would be the poorest district of Ireland, the land being very poor, and the produce little."

The two I have quoted are the only instances in this section of my district of manufactures being conducted on what may be considered a large scale.

In No. 2 section (Monaghan, Cavan, &c.) there is not much to be recorded under this head, merely one factory in the Castleblayney Union, at a place called Laragh, where they spin, weave, and finish, and employ in these operations about 300 hands in all.

In No. 3, or the Leinster section of my district, the chief seat of manufacturing industry is the town of Drogheda, in which two large firms employ upwards of 2,000 hands at present in cotton-weaving, and the spinning and weaving of flax; there is also, besides these, a small factory for weaving linen, containing about 60 looms.

This subject (in connexion with Drogheda) is thus referred to by a most competent and experienced authority; he says:—

"Until within ten or twelve years there was a large population of, say 3,000 to 4,000, handloom linen-weavers. From the constant disagreements with the master manufacturers, and strikes for higher wages, the trade has much decreased. The able-bodied went to Dundee, Lisburn, Belfast, &c.; a few are still employed, but the most part are now paupers. Machinery has now taken the place of handlooms and is increasing."

In addition to what has been just described at Drogheda, there is at Balbriggan, in the county Dublin, a factory employing from 250 to 300 hands, engaged in the making of stockings, for which this place has been long famed; and at Navan (county Meath) there is a small woollen factory, not, however, I believe, now employing more than some 40 or 50 hands at the outside.

What I have just enumerated may be taken as constituting the

larger descriptions of manufacturing industry to be found throughout my district; but as regards what I next come to treat of, namely, the several smaller classes of industry pursued, and not coming under the head of agricultural occupations of any kind, there is, I may say, in several quarters, though not in all, a very reasonable extent and variety of them.

No. 1 section of my district, however, takes in this respect, as in others, a decided lead of the other two.

As regards the descriptions of industry applicable only to the male members of families, handloom weaving has heretofore held a conspicuous place in Ulster, and constituted, in fact, one of the principal means which enabled the small farmers, generally, there to thrive as they did do.

This still prevails, but is almost everywhere represented as being on the decline, the powerloom gradually superseding it, and tending more and more, every day, to limit the operations of handloom weaving to the making of what is intended merely for family use; but, though, as I have said, the tendency of things is in this direction, handloom weaving still extensively prevails in several districts, and where it does, continues to give the small farmer an important aid to his other resources.

In this district other pursuits are actively and energetically followed, thus in the Newry district I learn that:—

"Scutch-mills are numerous and are scattered over all parts of the union; in the county Down side there are 27, and in the county Armagh side 24. On an average I am informed that about 20 people, men and women, are employed in each mill, that is in all about 1,000.

"These mills give employment for several months in the winter, when other kinds of work are scarce, and therefore they are of the utmost importance to the labouring classes generally."

There are also, as resources in this district, corn mills, foundries, stone-cutting, &c., and the same, though on a more limited scale, in the adjoining union of Kilkeel, where, also, there is a good deal of fishing, &c., besides.

In this district many of the small farmers pursue some little trade also, such as travelling through the country as hawkers of linen and other articles; and, in several parts, no inconsiderable number of this class earn a respectable addition to their ordinary means of livelihood, by going, from time to time, to England and Scotland with pigs, cattle, eggs, poultry, linen, and other things, in which a small trade of this description can be successfully conducted.

The female members of the community also follow such forms of industry as are suitable to their sex, such as shirt-making, muslin embroidery, &c., and other things, which cannot easily be enumerated here. In fact, as a general rule, the humbler classes of the inhabitants of this district appear to devote themselves actively to every description of industry within their reach, and it is this circumstance only which, as it appears to me, can account for the small farmers having been hitherto enabled to maintain their position as they have done, in the face of the difficulties with which they have to contend.

In both No. 2 and No. 3 sections of my district the amount of industrial occupation followed by the same class is limited, and in marked contrast to what I have described.

In some parts of the extensive district comprised in the two divisions now under consideration, handloom weaving at one time prevailed extensively, but in the greater part of them it is now extinct, and where any traces at all of it still remain it is only on a very limited scale, and chiefly for domestic purposes solely.

In the town of Ardee, county Louth, I learn that about 500 girls are employed daily at embroidery and lace-making, &c., but that the demand is uncertain, and the work, in consequence, not always remunerative.

In other places similar work, though not on so large a scale, is followed, and with the same results, as also shirt-making, &c., to a limited extent.

The state of manufacturing industry of this class upon one large estate in the county Monaghan is thus described by the agent for it, and may, probably, be taken as a tolerably fair illustration in this respect of the entire of the district to which I am now addressing myself.

He says :—

"Very little manufacturing industry prevails on the Bath estate—hand-lace manufacturing and flax-scutch mills, if the latter can be considered as such ; the lace makers are not numerous. I suppose that about £1,000 per annum is cleared by them as a total for their labour ; they are all females, and work at home in their own houses."

I shall conclude this branch of the subject with one further extract, taken from the answers of an intelligent correspondent, who, describing the general position of affairs as to this in one of the best circumstanced unions of Leinster, says :—

"Manufacturing industry to a very limited extent prevails here, viz., there are 4 flax scutching-mills, 1 steam sawing-mill, and 13 small corn-mills in the union. In the town of Kells we have 3 coachbuilders, 2 tanners, 1 handloom weaver (where, forty years ago, there were at least 50 weavers at full work), about 20 shirtmakers, 10 muslin embroiderers, and 3 boot and shoe makers, employing about 12 men."

The union just referred to, I may observe, comprises an area of 108,982 acres, is valued at £95,329, and has a population of 24,482.

X.—Migration to England of Labourers.

Q. "*Does the labouring population resort at all to England or Scotland for harvest or manufacturing work, and if so, to what extent does this take place?*"

From several parts of my district some of the most able-bodied young men have been in the habit of transferring themselves permanently to the mining and manufacturing districts of England and Scotland ; but that periodical migration at harvest time, formerly so general, has of late years greatly diminished,

and in some districts has entirely ceased; this being caused by the fact that, owing to the great scarcity of labour now experienced in many parts of Ireland during the harvest season, the wages obtainable at home present an effective counter-attraction. From certain parts of Armagh and Down, however, as well as the mountain districts of other counties, too, considerable numbers still continue to go for this purpose, as in former times, to England, &c.

Thus I am informed from the Newry district:—

"An immense number of the very small farmers go to England and Scotland for harvest, manufacturing, and other kinds of labouring work, while their wives and small children remain at home. The sons and daughters of small farmers, when they become fit, usually go out to service."

However, this cessation of the former resort of labourers to England, at harvest time, is not, in all cases, in my opinion, to be regarded as at all indicating any permanent improvement in their condition—for while, during the busy seasons of the year, they can now indisputably command ample wages at home, it is, I regret to say, very different in the winter time, especially in those districts where grazing has largely superseded tillage farming, and in which, it is to be feared, the labourers are now frequently exposed to severe privations.

A medical gentleman of high standing in his profession and enjoying a very wide practice amongst all classes, in a recent communication to me, describing the present state of the agricultural labourers in Meath, says:—

"They are not contented in consequence of the impossibility of getting work in the winter period, or on wet days, and the want of employment owing to the general laying down of the land for grazing purposes."

And he says—with reference to their position as to house accommodation, &c.:—

"Wretched, as in many instances there are three or four families in small cabins, containing only one, or at most two rooms."

However, as I had the honour of forwarding to you on the 8th inst., for the information of Her Majesty's Government, a special Report on the general condition of the agricultural labourers in my district, it is not necessary that I should further refer to the subject on the present occasion.

XI. Conclusion.

I have now gone successively, and in detail, through the several topics embraced in my instructions, and if I have been able to succeed in conveying to you, for his Excellency's information, any facts which can be regarded as being practically valuable for the purpose for which this Report was desired, I wish to add that I am mainly indebted for having been placed in a position to do so to the fulness and ability which have characterized the replies so obligingly furnished to me by the large number of correspondents with whom I have had occasion to place myself in communication

during the past six weeks, and to whom I am anxious to avail myself of this opportunity to express my very sincere sense of obligation.

It would have been a very great gratification to myself personally, and I am quite persuaded it would have been of advantage to those who may happen hereafter to peruse what I have just written, had it been possible for me to quote much more largely than I have done from the answers so furnished to me—many of which are exceedingly interesting, and have been of the most material assistance to me in forming my own conclusions; but, to have taken this course, I must have extended my Report to a length altogether inconsistent with the practical purpose for which it was required, and I have, therefore, been very reluctantly under the necessity of limiting myself strictly to such extracts as seemed to me best calculated to illustrate, briefly and in a convenient form, the various subjects with which it has been my duty to deal.

I have the honour to be,

Gentlemen,

Your most obedient servant,

W. P. O'BRIEN.

Poor Law Inspector.

To the Poor Law Commissioners, Dublin.

VIII.—REPORT FROM MR. BOURKE.

DISTRICT comprising parts of the COUNTIES of CLARE, GALWAY, KERRY, KING'S COUNTY, LIMERICK, QUEEN'S COUNTY, and TIPPERARY.

Lisnagry, Limerick,

19th January, 1870.

GENTLEMEN,—I have the honour to acknowledge the receipt of your letter of the 2nd December, transmitting a communication from the Chief Secretary to the Lord Lieutenant, in which he expresses His Excellency's desire to obtain, through the Poor Law Inspectors, information on various points relative to the position of the occupiers of land in this country; and in obedience to this direction, I proceed to lay before you such a report on the subject as time has allowed of my preparing, in reference to the district with which I am officially connected.

This district includes—nearly the whole of the county of Clare; the northern part of Limerick, comprising the Poor Law Unions of Limerick, Croom, Rathkeale, and Glin; and so much of the North

Riding of Tipperary as is contained in the Unions of Nenagh, Borrisokane, and Roscrea; also small portions of the counties of Galway, Kerry, King's County, and Queen's County, into which some of the unions in the district extend.

In the preparation of this report, I have availed myself of all sources of information within my reach, and have applied the results to the opinions which the experience of a life passed in this district has led me to form. I have consulted the principal land agents and several proprietors in Limerick and Clare, and have extended my inquiries to many occupying farmers whom I thought likely to afford useful information; and in my replies to the several queries, have endeavoured to embody the information obtained and connect it with my own views and opinions.

Upon the general subject of land improvement, it may be observed that it remains in much the same position as in 1845, when the Report was issued of Lord Devon's Commission. A large portion of the country continues in an unimproved state; and though some advance has been made in cultivation, yet there has been no adequate capital expended in permanently beneficial works, either by landlord or tenant. Of whatever has been done, the chief part is undoubtedly due to the tenant.

I. Buildings and Repairs.

All farms upon which the tenant is to reside are furnished with a dwelling of some kind; but if he requires to rebuild or add to the house, or to erect or improve the farm offices, the practice is that he executes the work at his own expense, subject to the following exceptions:—

(*a.*) In very rare instances—not amounting probably to half a dozen in this district—the landlord has erected all buildings himself without charge.

(*b.*) In a few instances he has put up the necessary buildings charging the tenants interest varying from $2\frac{1}{2}$ to 5 per cent.

(*c.*) In others he gives the timber and slate, or a portion of it; while in more, a small allowance—rarely bearing any substantial proportion to the outlay—is made in the half year's rent next ensuing, under the name of "encouragement."

These several forms of assistance to tenants are met with, for the most part, on large estates, the property of wealthy owners, resident or non-resident, but who constitute a small proportion relatively to the whole number of proprietors; and it may therefore be laid down that, as a rule, the great majority of residences and farm offices—such as they are—have, at one time or another, remotely or more recently, been erected by the tenants themselves. Substantial repairs may be said to be invariably executed by them.

II. Drainage.

On some properties money has been laid out upon thorough drainage by the owner, the tenant in almost every case paying interest on the outlay; on others a small allowance is made per

perch, or assistance is given towards the cost of tiles. But in the greater number of farms, all drainage is executed by the tenant, and in some instances it has been done to a considerable extent. In the evidence of Mr. Curling, agent to the Earl of Devon, before the Committee on the Tenure and Improvement of Land in 1865, he stated that about 1,500 acres of land had been drained by tenants on the estate during the 17 years preceding. Since then, as I understand from him, the area has been increased to 2,288 acres, affording an estimated increase of value of £858 annually to the estate.

III. Reclamation of Land.

There are three descriptions of land open to this kind of improvement—mountain, bog, and arable land incumbered with rocks and stones. Works upon the first and second are executed solely by the tenant, and are extensively carried on in parts of the county of Limerick. In the evidence of Mr. Curling, just referred to, before the Committee of 1865, he estimated the quantity of mountain land reclaimed by tenants exclusively at 1,500 acres. At the present time, 4 years later, he informs me that the total extent has risen to 3,056 acres, affording an increased annual value of £1,450 12*s*. In other parts of the county similar works have been executed, though on a smaller scale, but always by the tenant.

The reclamation of bog land has not been systematically carried on in any part of this district. Wherever it exists it has been the work of the tenants exclusively, and chiefly of the lowest class of cottiers who, raising a poor hovel at the edge of a bog and enclosing, first, a small patch for cabbages, have gradually extended their operations until they have reclaimed an acre or two of land and made it capable of yielding potatoes and oats, or rye; such men generally hold from the adjoining farmer and support themselves by their labour. The aggregate of these holdings is, in some unions, considerable. In parts of the county of Clare land has been cleared of stones, in some cases by the landlords before the farms were let, and in others by the tenants.

IV. Fencing.

Except where stone walls have been built by proprietors wishing to enclose farms which they were about to let, all the fencing has been executed by the tenant; the landlords in some cases contributing the quick for hedges. But this necessary work is, as yet, most inadequately performed throughout the largest part of this district.

V. Planting.

This is not carried on in any part of the country with which I am acquainted, on lands in the occupation of tenants.

Thus it appears that all the most important improvements to land are executed (nearly universally) by the tenants themselves,

with assistance from the landlord on some properties, but in the majority of cases at the tenants' sole cost. I am not aware that the tenant has, by custom or practice, any security for the value of such improvements. In point of fact a tenant improving his farm by works such as these, is never evicted by the original proprietor as long as he pays his rent. That evictions, without compensation, have occasionally occurred from political motives, or for some breach of rules laid down for the management of the estate, such as the admission into the dwelling house of a married daughter and her husband, or the transfer of part of the land to the son, or sometimes from motives even more capricious, cannot be denied. But a tenant is generally allowed, if holding from year to year, to enjoy the benefits arising from his improvements for a longer or shorter period, as the proprietor or his agent may think fit, and at the expiration of such time is required to pay an increased rent; if a leaseholder the increase is put on at the end of his term. In the cases referred to on the Devon estate a lease for 31 years was the guarantee given to the tenant for his enjoyment of the improvements he had made, or was proposing to make.

The new rent is usually fixed by arrangement between the parties; and I have not met with any cases where the tenant has been deprived of the advantages of his improvements by a disproportionate increase of rent, except where land has changed hands, or the lease of a middleman has expired. In both these events I have heard of cases of hardship, such as a man holding under a middleman at £10 a year, who, after having reclaimed over 50 acres, and erected considerable buildings, abandoned everything rather than pay the £80 demanded from him by the new owner. Much dissatisfaction is occasionally felt at the amount demanded; and it is not unusual to serve tenants from year to year with a notice to quit when a change of rents is in contemplation, as a means of more readily bringing them to terms; but such is their attachment to the land, and so great the difficulty of finding any other means of support, that the increase of rent is generally acceded to, and the tenant continues in possession.

There can be no doubt, that the fear of a rise in the rent operates extensively to check improvements, and this not only amongst tenants from year to year, but likewise—though in a less degree—among leaseholders. Some tenants, trusting to the character of the family under whom they hold, are still expending capital on improvements, without any tangible security; and some, of an unusually sanguine and energetic character, are doing the same under the most disadvantageous prospects—such as where a man holds as a tenant from year to year under a middleman whose lease is nearly run out. These men state that, the hope of a measure for tenant-right is their only encouragement.

Perhaps a portion of the county of Limerick would afford a fair illustration of the position of landlord and tenant through the whole of this district. The portion includes three Unions,

and contains properties of all sizes, and land of various qualities. Some particulars connected with them are given in the following table :—

Union.	Area.	Valuation.	Population in 1861.	Inhabited Houses.	Agricultural Holdings.				Landed Proprietors.
					Occupied by Owners in Fee.	Under Lease.	Year to Year.	Total.	
	A. R. P.	£ s. d.							
Croom, .	83,323 2 17	63,016 0 0	21,172	3,604	254	499	1,412	2,165	158
Rathkeale,	79,931 3 31	55,566 10 0	22,055	3,865	187	756	1,565	2,508	108
Glin, .	60,666 1 4	27,867 4 0	15,724	2,580	80	516	1,372	1,968	49
Total, .	223,921 3 12	146,449 14 0	58,951	10,049	521	1,771	4,349	6,641	315

Amongst the 315 persons appearing as landed proprietors, I have not heard of one who acts upon the English system and executes all the improvements—building, draining, fencing and planting—at his own cost. There are, in the district, several large estates of residents and absentees, managed by agents; upon three of them there are resident agents; the others are managed by agents in Limerick, Dublin, or elsewhere. Most of the smaller properties have likewise their agents—the proprietor seldom acting for himself. The larger estates are conducted on liberal terms—certain allowances being made to tenants carrying on improvements, if commenced with the sanction and approval of the agent. The principle of these allowances has already been explained. In the smaller estates allowances are seldom given, and a proportionably small amount of improvement is in progress. Resident proprietors being more frequent in the Croom and Rathkeale Unions, the land has a better appearance than in Glin. In the first two Unions 441 holdings are in the occupation of the proprietors in fee; but in Glin only 80. Still, in all three Unions, a large breadth of land is capable of great improvement by means of drainage, fencing, and reclamation, and much is still required in the residences and farm-buildings. Perhaps, in reference to the holdings under lease, these Unions may be better circumstanced than the generality, about one-third of them being under lease; whilst in Clare, the proportion is one-fourth, and in some Unions only one-fifth. But even here, nearly one-half of the agricultural holdings are tenancies from year to year, valued under £15 yearly. The process of improving these holdings, so as to develop their resources and enable the cultivator to obtain from them the maximum of production, must necessarily be slow, if left to the owner, and it is questionable if it would be any nearer its accomplishment, were the occupiers to be rendered immovable.

Instances of oppression of tenants by landlords are now extremely rare, and upon the whole, the relations of the two are not hostile; but there is little liberality in the landlords' dealings with tenants, and a sense of insecurity sometimes embitters the feelings of tenants towards their landlords.

I now proceed to consider the subjects referred to in the concluding part of Mr. Chichester Fortescue's Letter of Instructions.

I. Tenant-Right.

The Ulster tenant-right, as described by Mr. Blacker in his evidence before Lord Devon's Commission, has no existence whatever in this district. He states it to be "the claim of the tenant and his heirs to continue in undisturbed possession of the farm so long as the rent is paid." Such a claim as this is not and never has been recognised by any established custom here. Nor is the right known according to his alternative description, viz., "as the sum of money which the new occupier must pay to the old one for the peaceable enjoyment of his holding." A practice, in some measure resembling the Ulster tenant-right, has, no doubt, prevailed in the South for a very considerable length of time, and continues to this day. It was admitted by all the witnesses from the South of Ireland before the Devon Commission, and has appeared in the course of many later inquiries. It consists of a payment made by a person desirous of obtaining a farm to the tenant who is leaving it, and is in the nature of a bargain between buyer and seller. It most frequently occurs where the occupying tenant has fallen into difficulties, and is unable to meet his rent, but sometimes where he is quitting his farm for other reasons of a personal nature. The price is purely arbitrary, and is regulated less by the improved condition of the farm than by the means at the disposal of the purchaser, and the existing demand for land. It is not susceptible of measurement by any scale, and varies according to circumstances. It is given for farms held from year to year, especially when the character of the owner or agent is considered a security against capricious evictions or other harsh treatment. Various instances have come under my notice in the course of my present inquiry, of sums given by incoming tenants for farms held from year to year, which seem to defy any attempt at reducing them to a scale. Thus, a farm paying £116 a year fetched £500 to the outgoing tenant, whilst another paying £20 at about the same rate per acre realized £240. Another farm of 56 acres, subject to a rent of 26*s.* per acre, was recently sold for £520, and £100 was about the same time given for 3 acres, paying £2 2*s.* These instances are given out of a large number of which I have heard. It is also practised where there are leases.

Landlords and agents have been slow to recognise the practice. In the evidence before the Devon Commission, where it is admitted to be prevalent, it is frequently said to be objected to and disallowed. Now, however, consent is rarely refused, though

the arrangement is not unconditionally acquiesced in, and is never admitted as a right. It is frequently permitted as a means of securing arrears of rent, and an easy method of providing for a man whose embarrassments are driving him from his farm, and is favourably viewed if the purchase will have the effect of uniting the land to that of an adjoining tenant.

If the landlord or agent should refuse his assent, the outgoing tenant considers himself greatly aggrieved, and the position of the new comer might become very insecure. But, though the practice is so prevalent, there are instances where it is not unrestrictedly allowed by the people themselves. There is a recent case in the Ballyvaghan Union where a tenant, being in difficulties, was allowed to sell his interest. Whilst negotiations were on foot for a transfer to a proposed purchaser, who came from a distance, a notice appeared on the walls of the village, signed, "Rory of Slievenamona," threatening that "he would meet with a double-barrelled gun, anyone who would take the farm," and the matter came to an end.

There can be no doubt that, from a remote period, a certain limited right of property, and a distinct value have been attached by tenants in the south of Ireland to the occupancy of a farm. Its origin may not be so easily traceable as that of the Ulster tenant-right, but it seems more than probable that it sprung from a similar source. It has never been openly avowed, but it seems clearly implied in the conduct and sentiments of the people. It underlies their hatred to any dispossession, except for non-payment of rent. It accounts for the impatience with which they view such rules in the management of an estate as seem to interfere with their complete independence—which leads them to prefer an easy-going landlord who is satisfied to let them follow their own way, to one who, at great expense of time and money, labours to improve the condition of their farm, and lead them into better modes of husbandry. And it is this right which they feel they are disposing of when selling the "good-will." It is also, I think, clear, that it was jealousy of this claim to a species of property in the land, which influenced the owners in resisting the growth of the practice of selling, and still places impediments in the way of its fuller development.

2. Charges on Farms.

But, perhaps, it is the disposition by will so frequently made of his farm by a tenant, even from year to year, that affords the strongest illustration of this claim to a qualified property in the land. The practice is of everyday occurrence, and a case has been communicated to me of a tenant from year to year recently attempting to create certain charges on his farm by deed, in which was contained a recital that whereas A. B. (the tenant) was "seized and possessed" of a certain farm or land, &c., &c. Such wills generally purport to make a complete family arrangement, and bequeath the farm to a son, most commonly the eldest, charged with certain sums for younger children. The widow is also sometimes provided for by a bequest of a few acres for her own

use. As money cannot be raised on lands so held, the son to whom it passes gives his promissory note to the younger children, and tries by a fortunate marriage to obtain the means of payment more quickly than he can hope to do by the profits of the farm.

In reference to the two remaining points upon which I am desired to report, I have to state that no manufacturing industry can be said to exist in the rural portions of this district. The manufacture of flax, which formerly prevailed, is now confined to a farmer's house here and there, where linen for family use is sometimes made. A small quantity of flannel, frieze, and tweed is manufactured at country woollen mills, which are certainly on the increase; but they have not yet attained to any importance, and afford scarcely any employment outside the family of the owner. In the city of Limerick various branches of manufacturing industry are carried on, but the employment they afford is limited to the workmen of the town and their families, affording but little opening for the children of families residing in the country.

I do not find the labouring people from this district going to England or Scotland for harvest. Formerly it was the constant habit, but the reduction of the population has brought very remunerative agricultural employment at that time at home, and it is no longer for the labourers' interest to seek it in England or Scotland.

In conclusion, I may observe that, though the minds of tenants in all parts of this district which I have visited, are much elated at the progress of their cause, and profoundly anxious as to the nature of the legislative measure to be brought forward in their interests, rents have never been more punctually paid. The district is free from agrarian violence or agitation, and there is no disturbance in the customary intercourse of landlord and tenant. The one prevailing desire is for security of tenure at fixed rents.

I have the honour to be,

Gentlemen,

Your obedient servant,

R. BOURKE.

The Poor Law Commissioners.

IX.—REPORT FROM DR. KING.

DISTRICT comprising nearly the greater portion of the COUNTY of CORK and a small part of the COUNTIES of LIMERICK and WATERFORD.

REPORT on the existing relations between landlord and tenant in respect of improvements on farms, such as buildings, the erection and extensive repair thereof, drainage, reclamation of land, fencing, planting, &c., in that portion of Ireland comprised in the Poor Law unions of Bandon, Clonakilty, Cork, Fermoy, Kilmallock, Kinsale, Macroom, Mallow, Midleton, Mitchelstown and Youghal, forwarded to the Commissioners for administering the laws for relief of the poor in Ireland, on the 19th January, 1870, by

CHARLES CROKER KING,
Poor Law Inspector.

1, Belgrave-place, Cork, 19th January, 1870.

GENTLEMEN,—In accordance with your letter of instructions of the 2nd December, 1869, No. 30,290, I have the honour to submit for your consideration the following Report on the condition of the occupiers of land in that portion of Ireland comprised in my district, which includes the Bandon, Clonakilty, Cork, Fermoy, Kilmallock, Kinsale, Macroom, Mallow, Midleton, Mitchelstown and Youghal Unions, all of which are situate in the county of Cork, with the exception of a portion of the Kilmallock and Mitchelstown Unions, which extend into the county of Limerick, and of the Youghal Union, which includes a portion of the county of Waterford.

The area, population, and valuation of the above unions, exclusive of the city of Cork and the towns of Bandon, Clonakilty, Fermoy, Kilmallock, Kinsale, Macroom, Mallow, Midleton, Mitchelstown, and Youghal are as follows:—Area, 1,315,224 acres; population, 327,420; valuation, £920,602.

The unions under my charge being situate almost entirely in the county of Cork, it may be of some interest to notice the extent of land under crops at present, compared with that under cultivation ten years ago.

	Acres.
In the year 1858, I find that the extent of land under crops in the county of Cork was . .	509,032
In 1868 the quantity of land under crops had fallen to	469,508
	39,524

In the year 1868 there was a decrease in the following crops compared with 1858, to the to the extent of—

	Acres.	Acres.
Wheat, ...		33,952
Barley, ...		11,431
Potatoes, . . .		4,431
Turnips, . . .		8,275
Other green crops, . .		2,302
		60,391

And an increase in the following : —

	Acres.	Acres.
Oats, . . .	757	
Flax, . . .	729	
Meadow and Clover,	19,381	
		20,867
Net decrease as above, ...		39,524

The above table shows that the principal decrease has occurred in the cereal crops, and the increase in meadow and clover.

The total number of agricultural holdings situate in my district (exclusive of those held by owners in fee, which amount to 1,770) is 31,260; of which 14,573 are held under lease; the remainder, comprising 16,687 holdings, are tenancies-at-will.

Before entering into details, it may be as well that I should state from what sources I obtained the information embodied in my Report.

I derived much information from personal inquiry and observation. I addressed circulars and forms of queries to the principal landed proprietors and their agents; to the Chairmen of the several Boards of Guardians; to the Chairmen and several prominent members of the farmers' clubs; to a number of elected Guardians; to County Surveyors, Magistrates, Bankers, Clerks of Unions, and Relieving Officers, and I also obtained returns from the Clerks of the Peace for Cork, Limerick and Waterford.

I have carefully perused the hundreds of answers received by me, and have tabulated and arranged them. The replies, as might have been anticipated, are in many instances conflicting; nevertheless, having given the whole subject the most serious consideration I think the following statements under each head of inquiry, founded on the information at my disposal, may be accepted as fair, impartial, and faithful.

Building of Farmhouses and offices, and extensive Repairs of these, such as roofing, &c.

The present practice seems to be as follows:—The landlords in the majority of instances, when applied to, contribute slate and wood. But there is no established law or custom. Each individual case is considered on its own merits; and if the landlord assist, he does so as a favour, not as a right nor in obedience to any custom which has been absolutely established.

I could not obtain any reliable information as to the arrangements which existed between landlords and tenants with respect to farm-buildings which have been a long time erected. Those buildings are usually thatched. To the erection of such buildings at the present time, it is not usual for the landlord to contribute, and it is reasonable to infer that those buildings were erected by the tenants.

Drainage, when on a large scale, is usually done by the landlord, and the practice is, for him to advance the rent by a percentage of from 4 to 5 on his outlay; but in some instances 6 and even 7½ per cent. has been charged.

Drainage on a smaller scale is usually done in this way:—

The landlord opens and the tenant closes the drains, or the landlord allows so much a perch (generally equivalent to half the outlay); and in these cases it is usual for the landlord to impose such conditions as will insure that the drainage shall be efficiently done.

Drainage on a still smaller scale (such as the drainage of one or two fields) is usually done by the tenant himself, and under those circumstances it is stated to be generally imperfect.

Reclamation of Land, except by drainage, is on the decrease.

Some years ago, landlords or farmers frequently gave the use of a portion of land (generally mountain or bog) to an agricultural labourer for a time proportionate to the goodness or poverty of the soil, allowing him, in the better description of land, to take one, in the poorer perhaps three crops, of potatoes out of it; and on the land thus reclaimed it was usual to grow some cereal, such as oats. But this practice does not now exist to the same extent as formerly—firstly, in consequence of the advance in the wages of agricultural labourers, enabling them now to employ their time more profitably than they could at the period referred to; secondly, that the peasantry do not now depend so much on the potato for food as they formerly did; and thirdly, because the class of persons which used to make these improvements have left the country in great numbers.

Fencing, Iron Gates, &c.—Such fencing as exists has almost invariably been done by the tenants; but the fences are very imperfect, and iron gates are scarcely ever to be seen.

Planting by farmers can scarcely be said to exist. Planting is usually done by the landlord on ground retained in his own hands.

Guarantee.—The tenant has no guarantee or understanding, that in the event of his executing any permanent improvements

he will receive fair remuneration in case of surrender or eviction, or that he will be allowed undisturbed possession for a definite period. The majority of the landlords affirm that what the tenants call improvements are not worthy of the name—in fact, that they are so trifling, that they could scarcely be taken into account. It is, however, a matter for consideration, how far the absence of improvements may be attributable to the want of some security which would entitle the tenant to reasonable compensation in the event of his eviction, after having effected permanent improvements on his farm.

Increase of Rent.—In the case of drainage on a large scale, as already stated, the usual practice is to raise the rent by a percentage commensurate with the outlay by the landlord.

With respect to an increase of rent consequent upon improvements effected by the tenants, the answers received are conflicting. As a general rule, the landlords have stated in their replies that such is not the practice; whereas the tenant-farmers state it is. However, I believe that no increase of rent is made in the case of tenants-at-will, who seldom make any improvements; but in the case of leaseholders, it is usual for the landlord to take into consideration the absolute value of the farm on the expiration of the lease, and to fix the future rent accordingly, usually giving a preference to the former tenant.

Loss by Tenants of Value of Improvements effected at their own expense, through Eviction or disproportionate Increase of Rents.

Several of the tenant-farmers state in their replies that such losses have been sustained, through eviction or disproportionate increase of rents; but, on the other hand, some of the landlords state that the tenants when leaving of their own accord, or in consequence of eviction, are usually so heavily in debt from arrears of rent that their liabilities to them generally exceed the value of any improvements they may have effected.

Improvements have for some years been on the increase; but of late, pending the adjustment of the land question, they are at a standstill.

Notices to Quit are not of frequent occurrence; they are given in the majority of instances on account of non-payment of rent, or they may owe their origin to other causes, such as, tenants-at-will objecting to a proposed increase of rent, to gross misconduct on the part of a tenant, or to a necessity for the re-adjustment of farm boundaries, &c. From returns which I have received from the Clerks of the Peace for the counties of Cork, Limerick, and Waterford, I find that the number of ejectment decrees granted by the Chairmen of Quarter Sessions for those portions of the above counties included in the unions under my charge, was for the last four years as follows:—

During the year 1866, . .	54	Decrees were granted.
„ 1867, . .	60	„
„ 1868, . .	50	„
„ 1869, . .	44	„
Total decrees granted during the last four years, . . .	208	
Of these granted for non-payment of rent, ...	142	
For other causes, . . .	66	

And from returns furnished to me by the relieving officers of the unions under my supervision, I find that the number of notices of proposed eviction served on them under the provisions of the 2nd section 11 & 12 Victoria, cap. 47, was as follows:—

During the year 1866, . .	47	Notices were received.
„ 1867, . .	48	„
„ 1868, . .	46	„
„ 1869, . .	50	„
Total notices to quit, served on Relieving Officers during the last four years, . . .	191	

From the above returns it would seem that the number of notices to quit which have been followed up are not numerous. The landlord and tenant, I presume, usually come to a mutual arrangement; but it is to be borne in mind that the tenant under such circumstances must either surrender his farm or submit to the terms proposed to him, as he can offer no legal resistance.

Ulster Tenant-right does not prevail as a custom in the district under my charge; but there are several instances in which the landlord has permitted a tenant-at-will to sell his interest in a farm to a solvent tenant of whom he (the landlord) approved, but this is an act of grace on the part of the landlord, and not in obedience to any prevailing or established custom.

In some instances of eviction for nonpayment of rent, a tenant so evicted has been allowed to sell his interest in his farm and to receive the sum remaining after payment of the arrears of rent and law costs.

Dowers or Portions for younger Children are not charged by tenants-at-will upon their temporary occupations, but a common practice prevails of the following nature:—On the marriage of the eldest son of a farmer who holds as a tenant-at-will, the father agrees to hand over the farm, on his death, or perhaps sooner, to his son, on condition that the son gives him a part, or the whole, of the marriage portion which he receives with his wife, in order that the father may make provision for his younger children. But this is an arrangement independent of the relations existing between landlord and tenant. The charge is not, and could not, be secured by any legal form; but the undertaking is usually entered into

before witnesses, and, so far as I am informed, is usually fulfilled. The landlord in general is not consulted; the entire matter is a private arrangement between father and son.

In some instances the father wills that on his death his son shall be put in possession of the farm, on condition that he gives a promissory note to a trustee of the younger children for a sum of money which he names in his will. This custom is alleged to have led, in many instances, to litigation, or to the emigration of the son in order to evade payment.

Manufacturing Industry.—A prosperous tweed manufactory existed at Blarney; it has recently been destroyed by fire, but is being rapidly restored, and it is expected that full operations, will shortly be resumed. A manufactory for frieze and flannel at Midleton; two extensive flax mills, one at Douglas, the other at Blackpool (suburb of Cork); a calico manufactory in Cork; a manufactory for desiccating milk at Mallow; two brick factories, one at Ballinhassig and one at Youghal, where there is also a pottery for tiles and coarse earthenware; a few scutching and bone mills, also mills for the reduction of corn; handlooms, thinly scattered through the country, and crochet and the embroidery of muslin, at which latter occupations a number of young girls are engaged. These embrace the principal manufacturing industry of the district.

English Harvest.—The labouring population do not resort either to England or Scotland for harvest or manufacturing work; a few persons proceed to Wales to the collieries, but those are exceptional cases.

The result of the numerous inquiries which I have made seems to admit of being thus summarised:—

The Landlords complain that they are occasionally subjected to heavy losses from the surrender of farms impoverished by improvident or ignorant tenants; that in many instances, when a tenant has been evicted for non-payment of rent, or has been obliged to give up his farm on the termination of his tenure, the land has been found exhausted by bad tillage or by an ill-judged succession of crops, and also that serious loss is frequently suffered from large arrears of rent due by the tenant, and which the landlord has no means of recovering.

The Tenants, on the other hand, complain that they have no security of tenure, or guarantee of any kind that they will reap the advantage of any improvements executed at their own expense.

The inquiries which I have instituted seem to have revealed few instances of actual hardship sustained by a tenant, such as the forced surrender of a farm improved at the expense of a tenant, the rent of which had been punctually paid. Such cases are now happily of rare occurrence; but a case of oppression has occasionally arisen; its proportions may possibly have been magnified, public confidence disturbed, and a feeling of insecurity on the part of tenants thus engendered.

So far as I have been able to ascertain, harshness on the part of a landlord towards his tenants very rarely occurs in the district to which this Report refers; but, on the contrary, many of the tenants seem to have confidence in the good intentions of their present landlords. At the same time they do not appear to be content with their condition. They are aware, no doubt, that the "rights of succession," the sale of the property on which they hold, or caprice on the part of the proprietor, might destroy their cherished hopes; a feeling of insecurity has evidently taken possession of their minds, and they may, in consequence, have been deterred from executing improvements, the value of which they conceive might be lost by the action of disturbing causes which they could neither foresee, control, nor avert.

I have the honour, Gentlemen, to remain

Your obedient servant,

CHARLES CROKER KING.
Poor Law Inspector.

To the Commissioners for Administering the Laws for Relief of the Poor in Ireland.

X.—REPORT FROM DR. KNOX.

District comprising the County of Antrim and parts of the Counties of Armagh, Down, Londonderry, and Tyrone.

Beechcroft, Belfast, January 17th, 1870.

Gentlemen,—I have the honour to report that, in pursuance of your instructions of the 2nd ultimo, transmitted to me together with a copy of a letter addressed to you by Mr. Chichester Fortescue, the Chief Secretary for Ireland, intimating the desire of His Excellency the Lord Lieutenant, that inquiry should be made, through the Poor Law Inspectors, relative to the position of the occupiers of land and the ordinary relations existing between landlord and tenant in Ireland, I at once proceeded to institute such inquiries, both by the issue of written queries, and by means of personal interviews with various landowners, farmers, and others, as might enable me to reply to the several questions on the subject contained in the Chief Secretary's letter, in as full and correct a manner as the time allotted for the inquiry and the nature of the questions to be investigated would admit of.

The substance of the following report is, therefore, based on the very numerous oral and written replies, which have reached me, in answer to between 400 and 500 applications addressed to landlords, agents, various clergymen of the Episcopal, Roman Catholic, and Presbyterian denominations, tenant-farmers in different districts, solicitors, merchants, and others, with the object of obtaining information as precise and correct as possible. Inquiries so numerous were necessary, as the number of landowners is very considerable in the several unions which constitute my district, amounting in all to many hundreds. In one parish alone, as I am informed, so many proprietors as 170 are liable to pay rentcharge. I have also, where it appeared necessary, visited various localities for the purpose of verifying, by personal inquiries, the information which I previously possessed on the subject, from long residence in the district and my experience as an Inspector for many years. From these different sources of information I shall now proceed, in accordance with your instructions, to submit, with all deference, answers as definite and accurate as I am able, on the various points on which information is sought by His Excellency the Lord Lieutenant, and in reply to the inquiries contained in the Chief Secretary's letter.

Before going, however, more particularly into the subject, it may probably be considered not irrelevant or without convenience to give a brief description of the district of country placed under my supervision as a Poor Law Inspector, and to which the following report specially applies :—

The district in question contains sixteen Poor Law unions, viz. :—

1. Antrim.
2. Banbridge.
3. Ballymoney.
4. Ballycastle.
5. Ballymena.
6. Belfast.
7. Coleraine.
8. Cookstown.
9. Downpatrick.
10. Dungannon.
11. Larne.
12. Lisburn.
13. Lurgan.
14. Magherafelt.
15. Newtownards, and
16. Newtownlimavady.

These unions comprise the whole of the county Antrim, and parts of the counties of Down, Armagh, Londonderry, and Tyrone, constituting an oblong tract of country, situated in the north-eastern division of the kingdom, extending in its longest diameter, from south to north, about 80 miles, with a breadth, at the widest, of about 60 miles, and average of 50 miles ; and lying between the 54° and 56° of north latitude, and the 5° and 7° of west longitude.

It contains an area of 1,860,135 statute acres, and a population, according to the latest returns, of 904,494 souls.

It has a seaboard on the northern, eastern, and part of its southern aspect, the first touching Lough Foyle and the Atlantic Ocean, and the last the bay of Dundrum ; whilst its eastern confines are the North Channel and Irish Sea.

The soil is of varying qualities, colder and poorer in the

higher tracts of country, but more productive in the low grounds and valleys, the greater portion of which has been long brought into a cultivated state, the only mountain ranges being in Antrim and Londonderry, with a few smaller mountains in the central parts of Down.

Material portions of the surface are also occupied by peat moss, an abundant source of fuel, in the counties of Derry, Antrim, and Tyrone; but the bog in the county Down, is almost completely exhausted. And although there are a number of small land loughs scattered over the surface, Lough Neagh is the only considerable fresh water lake in the district.

The proportional occupation of the surface in Ulster in 1861 is described to have been

Of Arable Land,	74·29	per cent.
Of Plantations,	1·52	„
Of Towns,	·24	„
Of Water,	3·02	„
Of Uncultivated,	20·93	„
	100·	

Some slight but not material additions have been made to the arable land since that period.

The facilities for traffic and commerce are excellent. Good markets and fairs for the disposal both of manufactured and agricultural produce are numerous; whilst, within or nearly adjacent to the district, are the navigable rivers, the Foyle, the Bann, and the Lagan, and the seaports of Belfast, Newry, Londonderry, Coleraine, Larne, Dundrum, Portaferry, Strangford, Killough, Ardglass, Bangor, Carrickfergus, Cairnlough, Red Bay, Ballycastle, and Kilroot, which afford, by their numerous vessels and cross-channel steamers plying to England and Scotland, great facilities for intercourse and for the transit of articles of traffic of every description.

The district is further opened up by canals, good roads, and railways, which traverse it in various directions; and branches of the Banks of Ireland, the Northern, Provincial, Belfast, National, or Ulster Banks, all doing an extensive business, and in high credit, have been established in all the principal towns.

The articles of export are numerous, comprising black cattle, swine, sheep, and horses; salmon, butter, fowls and eggs in large quantities; potatoes, beef, pork, wheat, oats, building granite, iron ore, kelp, linen yarn, flax, linen and cambric. The climate, although drier than that of the western coast, is moist and favourable to the growth of green crops and oats. Heavy falls of snow are not frequent, and the same may be said of long continued frosts, but the rains are both frequent and considerable.

The relative population and value of the land, in the different unions comprising the district, may be gathered from the subjoined table, showing the area, population, and Government valuation of each.

In some places the letting price of land is the same as in the Government scale—in a few cases less, but generally somewhat

more, although rack-rents are, I think, very exceptional in this part of the country, to which alone all my observations are limited.

The valuation varies much in different unions, and even in different parts of the same union, giving rise to a similar variation in the rents demanded, and, in general, remarkably well paid.

TABLE showing the Area, Population, and Valuation of the several Unions comprising my district of inspection.

Name of Union.	Area in Statute Acres.	Population.	Valuation (fractions omitted).
Antrim,	117,119	39,652	£121,488
Banbridge,	124,928	71,918	153,398
Ballymoney,	127,518	41,583	81,101
Ballycastle,	102,197	19,653	43,566
Ballymena,	161,161	74,597	121,463
Belfast,	47,812	144,629	497,064
Coleraine,	112,396	40,562	94,265
Cookstown,	96,720	37,953	62,592
Downpatrick,	147,361	57,969	172,614
Dungannon,	102,548	51,892	92,668
Larne,	117,784	35,087	91,982
Lisburn,	119,843	66,882	166,077
Lurgan,	79,464	73,930	135,859
Magherafelt,	156,721	63,852	90,444
Newtownards,	93,851	53,428	129,903
Newtownlimavady,	152,712	30,907	68,005
	1,860,135	904,494	£2,122,489

On referring to the Chief Secretary's letter it will be seen, that the several points of inquiry may be resolved into the following thirteen queries, the eleven first having reference to the relations between landlord and tenant, and the other two, to the condition of the labouring classes :—

I. Improvements, including building of houses and offices, drainage, reclamation of land, fencing and iron gates, and planting, by whom and at whose cost have they been effected, whether and how far by the landlord and tenant respectively, or by both conjointly ?

II. What security has the tenant for the improvements made by him ?

III. Whether the annual rent is usually increased in consequence of the improvements effected by the tenant ?

IV. Whether there are many instances of the tenant losing altogether the value of his improvements, either by eviction, or disproportionate increase of rent ?

V. Whether improvements are increasing or declining ?

VI. Whether notices to quit are of frequent occurrence, and often followed up ?

VII. Whether the Ulster tenant-right custom is in existence *i.e.*, whether any payment is made to the outgoing tenant, with or without the consent of his landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the tenant or preceding tenants?

VIII. Whether such custom is confined to tenants-at-will, or extends to leaseholding tenants?

IX. Whether the custom can be defined, and a value set upon it, at so many years' rental, or at so much per acre?

X. Whether the custom is spreading and gaining ground?

XI. Have dowers, portions for younger children, or the like, been charged by tenants-at-will upon their temporary occupations?

XII. Does manufacturing industry, either on a large or small scale, prevail or exist in the district—meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of whatsoever sort?

XIII. Does the labouring population of the Inspector's district go over to England or Scotland for harvest or manufacturing work, and to what extent?

I.—*Improvements.*

Q. "*To what extent have the dwelling-houses, offices, fences roads, reclamations, works of drainage, plantations, &c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and, in fact, constituting those farms, as distinguished from waste land, been created by the present or former tenants, or by the present or former landlords respectively?*"

Q. "*Whether any of these, and if so which, are executed at the cost of the landlord, or whether they are done by the tenant at his own cost; and in the latter case, whether the tenant has by custom or practice any security for the value of his improvements, either by guarantee or understanding, that he will receive a fair proportion in the event of eviction or surrender, or by guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period?*"

The inquiry, on this head, resolves itself into a consideration of the relative proportion of the improvements now existing, effected by the present landlords and tenants, and by the former landlords and tenants, respectively, and I shall, therefore, in the first place, address myself to the former clause of the query, as affording materials for a pretty satisfactory reply, reserving the second more difficult part of the inquiry for subsequent investigation. As regards improvements effected by the present landlords and tenants, I shall advert to them in the order set down in the letter of Mr. Fortescue.

1. *Buildings.*

Q. "*What is the general practice in your neighbourhood as to making improvements on farms, such as:—*1. *Building of farmhouses and offices, and extensive repairs of these, such as roofing?*"

It may be stated, generally, that the farmhouses and offices are, for the greatest part, built and kept in repair by the tenants.

In some instances (pretty numerous), slates, timber and lime, either in whole or in part, are contributed by the landlord; in other instances, pecuniary assistance, amounting to one-fourth or one-half of the cost. In individual cases, and on a few properties, the buildings have been altogether erected by the landlord, followed generally by an increase of rent, to the extent of fair interest on the outlay; and this would, of course, so far, bar any subsequent claim for compensation on the part of the tenant.

On some other properties, the landlords are willing to erect the necessary buildings on the same conditions.

On the estates of some of the London companies, which lie principally within my district, money loans are advanced for building at an easy rate of interest, as 4 or 5 per cent.

On an extensive estate of the Marquis of Donegal, which is held on the tenure of lives renewable for ever, the buildings and other improvements are, of course, exclusively made by the lessees, who alone have now any interest in them.

2. *Drainage.*—As regards drainage, it would appear that, within the present century, the main or arterial drainage has been chiefly carried out by the landlords, in some cases solely, in others, conjointly with the tenant, either from his own private resources, or more extensively by means of public loans, under the provisions of the Lands Improvement Act, the Labouchere Letter, and the Board of Works, and very large sums of money have been thus expended within a few years; but the practice regarding it varies, some landlords charging the interest of the money expended, making it an addition to the rent, and a few constructing the principal drains gratuitously.

With reference to the cross or field drainage, which received a great impulse in the early part of the present century, by the introduction of what were termed French drains, and more recently of the system of Mr. Smith, of Deanstown; it may be stated that the greater portion is effected by the tenant, but, frequently, with a certain amount of assistance from the landlord. Many contribute to the expense by giving draining tiles, either gratuitously or at half-price, others by allowing 3*d.*, 4*d.*, 5*d.*, or even 6*d.* for every lineal perch of a drain duly constructed. Some pay half the cost, some the entire, others remit a year's rent as a recompense, and, in a few instances, it has been stated, that the allowance made by the landlord has exceeded the entire expenditure.

Where the landlords have contributed, the amount has frequently been in free gift; whilst others hold it as a lien on the

farm, in case the tenant should sell his interest at some subsequent period.

The Fishmongers' Company will advance money at 4, the Clothmakers' Company at 5 per cent., for the purpose of drainage.

In a few instances large sums of money have been expended by certain proprietors for drainage, the Drapers' Company having within a few years allocated £5,000 to this purpose.

Drainage cannot, however, be looked upon as a permanent improvement, not to say that it is frequently injudiciously planned; the sewers are liable in any case to become clogged and defective after a number of years, varying according to the nature of the soil and the mode of construction. The average period of their complete efficiency does not probably exceed 30 years; and although much has been done to improve the land by drainage, especially within the present century, much remains to be effected, in various localities, by which the productiveness of the soil could be materially augmented. In some districts it is still being carried on, but not so actively as formerly; whilst in others it appears to be altogether stationary—for the present time, at all events.

3. *Reclamation of Land.*—There has been no extensive reclamation of land, within my district, in recent times, being principally limited to exhausted bogs, patches of furze brake and underwood, rough stony knolls, and marshes of greater or less extent; and, with the exception of somewhat extensive tracts of peat moss in the counties of Antrim, Londonderry, and Tyrone, and certain marshes in the vicinity of Downpatrick and elsewhere, the ground has been so long under cultivation, that no extensive field for reclamation remains in this part of the country.

The manual labour and expenditure, necessary for reclaiming the soil, have usually been contributed, in the first instance, by the tenants, so far as it has been effected in recent times; but it cannot be said to be exclusively at their cost.

In the case of exhausted or "run-out" bog, as it is termed, the subsoil is the property of the landlord, to which, as he has never been in possession of it at any time, the tenant could advance no claim. Having, however, executed the manual labour of bringing it into cultivation, the instances, I think, are very rare in which a return for his expenditure has not been made by the landlord, in giving the occupancy of the land thus reclaimed, either by lease, agreement, or tacit understanding, at a nominal, or, at any rate, a comparatively low rent, for varying periods of 8, 10, 12, 14, 20, 25, or 31 years, until the tenant is supposed to be recouped for his outlay. In some instances the landlord also pays half the cost of the reclamation, and others a fixed allowance for the quarrying and removal of rocks, and the levelling of rough and irregular knolls.

In some instances, however, it is alleged that the period for which the landlord receives no rent, or an inadequate one, is not sufficiently extended to give a full recompense to the tenant, and this allegation may be, exceptionally, correct.

4. *Fencing, iron gates, &c.*—It is usual for the extern boundary fences, between estates, to be constructed by the landlord. The mearing between farms is sometimes made by the landlord, alone, or in conjunction with the tenants interested; and the same observation will apply to alterations made to square conterminous farms.

As a general rule the field fencing is executed by the tenant.

Some proprietors, as the Mercers' Company, supply quicks and trees, and others supply them only in part. Other proprietors, as the London Society, will give money for the purpose, at 4 per cent., or some low rate of interest.

By some owners assistance is given in other ways, as by letting the fenced land at an under-rent for some years, or by giving a rate of one shilling, or other sum, for each perch of fence properly constructed.

The usual fence is an earthen bank and ditch, strengthened by a row or rows of hawthorn quicks, and sometimes interspersed with forest trees.

The fencing is variously executed; in some places ill-planned, and badly constructed, in others skilfully laid out and executed. The greatest defect in the fences is their crookedness and disproportionate number, occasioning a serious waste of ground. In point of fact, one of the greatest improvements that could be effected, would be to remove a considerable portion of them, and thereby render available a material quantity of fertile soil; not to advert to the minor consideration of the improved appearance which the change would give to the aspect of the country.

The gates on town-parks are frequently made by the landlords, but whether constructed of wood or iron, they are, on some properties contributed by the owners, but more generally erected by the tenants. But this differs from other kinds of improvements, in this respect, that a tenant could legally remove the gates which he had erected, as they are held in law, to be what is termed "movable fixtures," and, at any rate, it is customary for the landlord either to make an allowance for them, or to permit them to be sold by the out-going tenant, or to be removed by him. I may add, that iron gates, although pretty common in some districts, and on particular properties, are by no means yet in general use.

5. *Planting.*—There has not been any planting, on an extensive scale, in recent years, as it was checked by the low price of home-grown timber, scarcely sufficient to repay the cost; but, more recently, a considerable increase in the demand and price, has taken place. Still, a considerable amount of detached homestead and farm planting has been carried on, and various larger plantations have been made on a number of estates. On the whole, the greater part of my district is pretty well wooded, especially the vale of the Lagan, and the confines of the river Bann, the parish of Killead, as well as various other tracts of country. Many of the demesnes are remarkably well planted, both in sheltering clumps, and more extensive belts. Amongst these might be instanced, the mansions of Hillsborough Castle, Mountstewart,

Castleward, Seaforde House, Antrim Castle, Tollymore Park, Shane's Castle, Ranfurly Park, the estates of several of the London Companies, Langford Lodge, Bellarena, Somerset, and Massereene, and Moyola Parks.

The east coasts of Down and Antrim are not so well wooded as the other parts of the district.

With very trifling exceptions, no important planting has been effected by the tenant, although it takes place, pretty generally, to a limited extent, usually for the purpose of shelter, though occasionally of ornament, and it is sometimes promoted by the contribution of trees on the part of the landlord.

In many localities the farms are too small, and the land too valuable, to admit of much planting, and it is sometimes objected to, on account of injury to the grain crops by its harbourage of birds. The trees, moreover, although usually occupying land for which the tenant pays the usual rent, are the property of the landlords (the tenant not having even the rights of estover* enjoyed by the English tenant, unless under the Timber Acts which are seldom brought into operation) who may, and frequently do prohibit their being cut by him, and fell and dispose of them for their own advantage. It is obvious that this arrangement is both calculated, naturally, to create dissatisfaction, and to check the progress of planting; at the same time, it is necessary to protect the landlord, to a certain extent, as he might be a loser to a considerable amount by the land occupied by planting being left in an unreclaimed and barren state, if the trees were merely cut and not extirpated; and the Registration Act appears consequently susceptible of improvement, both as regards the tenant and the landlord.

Various Acts have been passed to protect the tenant, in this respect, but some have fallen altogether into abeyance, and even the most recent of them, 5 Geo. III., c. 17, a Registration Act by which the tenant could retain his property in the trees planted by him, at the cost of a few shillings, has been very little acted upon; and, I believe, the duty of the Clerks of the Peace, at the present day, so far as the registering of trees goes, is nearly a complete sinecure. As regards the cost of planting, it may be stated that any extensive plantings have usually been executed by the landlord, but the farm plantings usually at the cost of the tenant.

So far as regards the improvements carried on in the present day; and I now proceed to advert to the further inquiry implied in the Chief Secretary's letter, viz.:—

Q. "*To what extent have the dwelling-houses, offices, fences, roads, reclamations, works of drainage, plantations, &c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and in fact constituting those farms, as distinguished from waste land, been created by the present or former tenants, or by the present or former landlords respectively?*"

* The right, that is, of taking timber and wood necessary for the purposes of his farm and appurtenances.

The attempt to answer this inquiry carries back the investigation for an unlimited period, as it would be necessary to ascertain, with some exactness, the improvements effected by former generations of landlords and tenants, in order to compare them with those of the present day and to decide, with anything approaching to correctness, how far they have been respectively the work of either class, at different periods of time. At all events, in various parts of my district, a portion of the lands has not for a very long time been in a condition which could be properly described as waste land. For instance, in the barony of Ards, in the county of Down, so long ago as the beginning of the seventeenth century, part, at least, of the soil was, even at that time, ready to the hand of profitable culture, and so productive, that it led to the substitution of numerous watermills, not previously in general use in that part of the kingdom (although common in Ireland long before) for the well known querns or handmills generally employed; and the grain produced, not only sufficed for home consumption, but admitted of so large an export to Scotland, that it led to the enactment of several statutes by the Scottish Parliament, to prohibit its introduction into that country, and to extensive smuggling to elude their force. And, about the same period, the services exacted by the tenure of "soccage" from the villeins (corresponding to the tenant-farmers of the present day), include the usual ordinary agricultural operations now in use on arable land, viz., plough service, and carrying out manure, manuring the land, and making hedges. This form of holding was, however, subsequently abolished, as it was felt oppressive by the tenant, especially as he had no specific time of tenure.

See the Montgomery MSS., vol. i., pp. 34 and 62.

The question of comparative extent of improvements made by the present landlords and tenants, and the apportionment of the cost between them has been already answered in a previous part of the report. It is, however, more difficult to ascertain, with any degree of certainty or correctness, either the relative improvements made by these two classes in past times, or the comparative amount effected in the present, as contrasted with former periods. As regards the first point of the inquiry, it may be stated, that no materials are available, to show the relative cost incurred by the landlord and tenant, in the past and preceding centuries. In many cases no records, probably, exist, and in other instances, on large estates, the practice, as now, may, probably, have varied. The difficulty of making any general and satisfactory answer to this part of the inquiry, is shown by the replies (definite enough on other points) given to the queries issued on the subject, some of the writers alleging the intricacy of the question to be so great as to prevent a satisfactory answer being given, a number making no reply at all, others giving replies vague and indefinite, and some appearing to answer without any correct appreciation of the true bearing of the question.

At all events, however, it may be stated generally, that the entire improvements, effected in the progress of time, have been very great, and that the now existing value of the farms may be

looked on as the combined and successive product of many generations, variously effected by the landlord and tenant, at different periods, and agreeably to the customs in force at different times, and in different districts, so, as in the end, to leave a compound interest in the improvements, the relative amount of which it would be impossible now to apportion with any certainty and correctness, either between the landlords and tenants, respectively, in past generations, or between the present, as compared with the past, races of owners and occupiers.

In many cases the improvements, though nominally carried out by the tenant, at his own expense, may in reality have been at the cost of the landlord; for before the introduction of the tenant-right custom, when leases were more general, the more material and expensive improvements, which have been before adverted to, were made by the tenant, under contract to do so, and in carrying them out, he merely fulfilled the covenants in his bargain, as may be seen on reference to any of the old leases, some of which are now before me, the rents being nominal, low, or graduated, according to the contract entered into between the parties. The following instances, amongst many, may be given, of large sums expended by the landowners on various improvements on their estates in recent times:—in one case, £60,000; in another, £17,000; and in a third, £5,000; and the instances might be multiplied to a considerable extent. Probably, however, it might be correct to say, that the improvements effected have been greater in the present, than in former centuries.

The preceding observations will show, so far as it may be possible now to determine, the relative and conjoint expenditure of the landlord and tenant; and only few of the replies to my inquiries attempt to assign any definite proportion. One answer, however, fixes the amount of cost incurred by the tenant as seven-tenths of the whole; another thus apportions it:—

	Paid by the Landlord.	Paid by the Tenant.
Dwellings and Offices,	2 per cent.	98 per cent.
Fences and drainage,	50 „	50 „
Roads and Plantations,	95 „	5 „

and a third, thus,

Dwelling Houses,	25 „	75 „
Farm Roads, .	75 „	25 „
Fences, .	25 „	75 „

But I do not think any definite computation, now attempted to be made, can be implicitly depended on, as the materials are wanting for making any calculation which would be generally applicable. Extensive outlay, where made by the landlords, occurs variously, and is not limited to any particular part of the district.

II.—*What security has the tenant for the value of the improvements made by him?*

Q. "*Whether the tenant has, by custom or practice, any security for the value of his improvements, either by guarantee or understanding, that he will receive a fair proportion in the event of eviction or surrender, or by guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period?*"

In reply to this query, it may be stated, that in cases where the tenants—perhaps something less than one-fourth of the whole number, in my district—have leases, they cannot, of course, if they fulfil the covenants, be disturbed until their expiration.

Tenants-at-will have no *legal* guarantee whatever, either for undisturbed possession, for any period of occupancy, or remuneration for the value of their improvements if evicted, and they comprise the greater proportion of the whole, in the different unions, as shown by the following table:—

Name of Union.	Tenancies at Will.	Leaseholders.	Total.
Antrim, . . .	2,307	1,810	4,417
Banbridge, . .	8,365	1,328	9,693
Ballymoney, . .	3,845	1,234	5,079
Ballycastle, . .	2,252	1,058	3,310
Belfast, . . .	787	902	1,689
Coleraine, . . .	2,651	949	3,590
Cookstown, . .	4,529	1,206	5,735
Dungannon, . .	6,930	1,441	8,371
Downpatrick, . .	5,122	1,018	6,140
Larne, . . .	2,971	982	3,953
Lurgan, . . .	4,867	756	5,623
Lisburn, . . .	5,069	2,135	7,204
Magherafelt, . .	8,348	1,846	10,194
Newtownards, . .	3,144	1,055	4,199
Newtownlimavady, .	2,141	1,219	3,350

The tenant has, however, the moral and strong security of practice and custom of the Ulster tenant-right. It is very unusual, and only in exceptional cases, that he is disturbed, provided he pays his rent, and many families continue on the same farm for 3, 4, or 5 generations in succession, removals being infrequent. But even where evicted, or unable to pay the rent, the custom of tenant-right, strongly enforced by public opinion, gives him security, as a general rule, against any loss, even on properties where the selling price is restricted by the landlord; and on the large and numerous properties, where the right of unlimited sale is either sanctioned, or acquiesced in, by the landlord, the tenant frequently receives, not only the fair value of his unexhausted improvements, but frequently much more.

There is this ground of insecurity, however, that the right to sell is only permissive, depending on the will of the landlord, who might, if so inclined, refuse his consent altogether, or by raising the rent unduly, render the permission, even if given, nearly valueless; but the attempts to do this, so far as I know, have been usually infrequent, and from the very strong force of general opinion, not attended with success.

This feeling of insecurity principally arises where there is a

change of owners. In one recent case where a large property was brought into the market, and in which the tenants had the advantage of unlimited right of sale, they exhibited their uncasiness by holding a public meeting, to devise means of securing their interests, and the proposal was entertained, that the tenants should themselves, if possible, become the purchasers, so as to avoid falling into the hands of a landlord, who, possibly buying the land at a high rate, and in its actual and improved condition, might not consider himself bound to recognise the custom of tenant-right, and in virtue thereof, to accept of rent much under the real value.

III.—*Q. "Whether in either case the annual rent is usually increased"?*

The annual rent is augmented, from time to time, on general grounds—such as increased value of agricultural produce, general advance in prices, change of proprietorship, or on the fall of old leases made, perhaps, more than half a century ago, in which the rents, then reserved, were much below the present scale—but not, I think, on the special grounds of the improvements effected. The average rent of land in my district is not comparatively high, and there are very few instances of a rack-rent being exacted. In many cases the rents are now lower than they were fifty years ago, at the close of the Buonaparte wars.

Some proprietors adopt the plan of a revaluation at stated periods, say at the end of 21 years, when a rise or fall may take place on particular farms, according to the circumstances of the case.

And that the rents, generally, are not too high is shown by the large increase obtained by middlemen when subletting, and by the obvious and general improvement in the appearance and modes of living of the farming class, not to advert to the considerable sums of money invested by them in the various banks.

A few replies state, that the increase made on the score of the improvements effected is so great as to absorb the whole value of the tenants' improvements, but the general testimony is opposed to this view of the case, and if correct at all, it is only in exceptional instances.

IV.—*Q. "Whether there are many instances of tenants losing altogether the value of improvements effected at their own expense, through eviction, or disproportionate increase of rent?"*

The general testimony, in which I concur, is, that instances of tenants altogether losing the value of improvements, effected at their own expense, are very rare, as evictions seldom take place except for non-payment of arrears of rent, sometimes amounting to, or exceeding the cost of any improvements that have been really effected, and in almost all cases, even then, the tenant is allowed

to sell his interest. No instance, so far as I am aware, has occurred, in my district, in which the relieving officer has given relief to an evicted family, under the special provisions of the existing Poor Laws.

Loss by disproportionate increase of rent is also infrequent; but this point has been already dealt with.

On the whole, with extremely rare exceptions, as two or three instances in the Banbridge Union, and one or two elsewhere, referred to in the answers to the printed queries, no specific allegations of any loss are contained in the numerous replies to the inquiries which I have been able to make, although exceptional cases of hardship may have occurred, and chiefly on the change of ownership.

V.—*Q. "Whether improvements are on the increase, or declining?"*

There is some difference in the views of different observers on this point, but for 30 or 40 years, the improvements have been great and obvious.

They may not be so great, just at present, as at former periods, owing to the general depression in trade, and the uncertainty felt as to a change in the laws affecting landed property; but, in my opinion, they are still advancing, although less rapidly than formerly.

The great improvements which have taken place, generally, are evidenced by the change in the general aspect of the country, advanced modes of tillage, by the superior quality of the swine, sheep, and black cattle, as well as by the style of equipment, dress, furniture, and living—although there may be a few exceptions, on particular properties, and these not the most extensive.

VI.—*Q. Whether notices to quit are of frequent occurrence; and if so, are they generally followed up?"*

At one time, regular notices to quit constituted a part of the usual management, on many properties—not with the view of carrying them into effect, but of securing the control of the landlord and the payment of the rents.

But the practice has been greatly discontinued, especially since the law has enabled the landlord to proceed by ejectment, when a year's rent is due; and, although, in some places, still common enough, I believe they are rarely resorted to, except under special circumstances—as to get rid of a bad character, to consolidate adjoining farms, to settle serious family feuds, to resume land for the landlord's own use, but most usually, where large arrears of rent have accrued; and even in this case, the tenant is generally allowed, to remain if he can manage to discharge his pecuniary liability, or to sell his interest, if things come to the worst.

On many estates they are very infrequent, and on some almost or entirely unknown.

VII.—*Q. "Whether the Ulster tenant-right custom is in existence in your district; that is to say, whether any payment is made to the outgoing tenant, with, or without the consent of his landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the tenant, or by preceding tenants?"*

In my district, which may be termed the heart of the tenant-right country, the Ulster tenant-right custom—meaning, as stated in the query, payment for good-will or disturbance, irrespective of compensation for existing improvements, may be fairly described as universal, or nearly so.

The practice, however, may be defined as two-fold:—

1st, as unlimited, where the landlords permit the unrestricted right of sale, to the highest bidder, in some instances, even by auction; or although disapproving (as many do) of the custom, they acquiesce in it—the only reservations being, that all arrears of rent shall be discharged, and that the landlord shall be satisfied with the character and solvency of the incoming tenant.

2nd, as limited, where the landlord approves, or at least assents to, a sale, under the reservations just stated, but limits the price, either to so much per acre (the amount varying very much on different properties) or to so many years' rental; the balance of which, after deducting arrears, he will either himself pay over to the tenant, or allow him to sell to a third party.

There may be a few—but only a few—properties, principally small or newly purchased, in which the owner does not recognise the tenant-right custom, in any degree or form.

On many of the larger, and smaller estates also, the first plan is in very general operation, and the second also to considerable extent.

Where the limitation of price is carried out, some are unsatisfied, considering that where the sum is fixed at a low rate, the tenant is not sufficiently reimbursed. This practice, however, is not so unpopular as might be anticipated; for, as there are, of course, as many buyers as sellers, the latter wish to get as high a price as possible, but the former, to purchase at as cheap a rate as they can.

There appears, however, to be a growing feeling amongst the tenantry in some districts, that there is an increasing desire on the part of some landlords to curtail the custom.

VIII.—*Q. "If such a custom exists,* (1) *whether it is confined to tenants holding at will, or extends to leaseholding tenants?"*

The tenant-right custom is general, extending both to tenants-at-will and leaseholders.

The latter could, of course, sell his interest, independently of the landlord, where the right of sale is not reserved in the lease, if he considered it prudent and advisable to do so; but the purchaser considers that he is buying more than the remainder interest in the lease, viz., a claim for continued occupancy after it has expired.

In some cases, but not always, the tenancy-at-will brings a higher price than where there is a lease.

IX.—*Q. "Whether it can be defined, and a value set upon it, at so many years' rental, or at so much per acre?"*

I do not think it can be clearly defined, or that it presents the same ideas to different minds.

Generally, it is held to imply, not only the value of the improvements, but the value of mere possession, and I do not think that the term Ulster tenant-right is limited, in popular opinion, merely to the claim for disturbance or good-will.

But even if it could be defined in terms, no fixed value could be set upon it, as the price, whether by the acre, or rental, is arbitrary, varying extremely, not only on different properties, but in individual cases. Even the same farm, when sold at different periods, will bring prices so different as not at all to be accounted for by any change in the state of improvement. It varies in value per acre from £5 to £10, £15, £20, £30, £40, and even the fabulous amount of £60 per acre, according to locality, condition, character of the landlord and his agent, the price of agricultural produce, and various other circumstances.

X.—*Q. "Whether the custom, if it exists, is spreading and gaining ground, in your district, so far as your experience goes?"*

By some it is alleged to be dying out, and by many others to be at least, stationary, if not extending, in which latter view, my own observations would lead me to concur. Many landlords, no doubt, consider it disadvantageous, and look on it with disfavour, but they go along with the stream, and offer no active opposition; other landlords approve of it, and look on it, especially in its unlimited form, as being as good a mode of managing property, as can be attained, as it secures against losses in rent, gives the buyer the chance of purchasing at the lowest price he can fix, and the seller the advantage of gaining the highest value for his interest as it stands, and obviates the necessity for endeavouring to ascertain and define the value (often a very difficult task) of unexhausted improvements, thus constituting, in point of fact, a free trade in land.

XI.—*Q. "Has it come within your experience that dowers, portions for younger children, or the like, have been charged by tenants-at-will upon their temporary occupations?"*

Throughout the greater part of my district the practice of charging the mere occupancies, with dowers for widows, and portions for the younger children, as if the land were their own, is very prevalent. Many landlords sanction, and give effect to, the wills thus made, for, of course, they could not be carried into effect without their assent. The person thus getting the succession is thereby often seriously embarrassed, but the arrangement is usually well carried out.

XII.—*Q. "Does manufacturing industry, either on a large or small scale, prevail or exist, in your district, meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of whatsoever sort?"*

Manufacturing industry exists, to a considerable extent, less or more, over the greater part of my district, especially within a radius of thirty miles around, having Belfast for a centre. The mills for the spinning and weaving of cotton and flax, but almost exclusively the latter, have increased more than one hundred fold within the last fifty years, and the population from about 30,000 to 150,000 souls.

Mills of the same description exist, now, in many other towns, as Killyleagh, Ballymena, Lisburn, Banbridge, Cookstown, and Ballymoney, the numbers having been much increased during the the scarcity of cotton during the late war in the United States of America. At present, however, some of them are idle, and some only work "short time," owing to the depressed state of trade. There are also various very extensive bleach-greens, and manufactories of thread, cambric, and damask.

Hand spinning of flax, once universal and a source of great profit amongst the female population, has entirely ceased. Handloom weaving, however, is still pretty general, in different parts, but especially in the districts adjoining Belfast, Newtownards, Lisburn, Banbridge, and Ballymena. About Coleraine and Newtownlimavady, shirtmaking is now pretty extensively carried on, as well as embroidery of muslin, to some extent, almost in all parts of my district, some of it of a very elegant and costly description. The latter employment has, however, of late years greatly fallen off, owing to failure of some of the large employers, change of fashion, and the absorption of the female population into other occupations, owing to the increased rates of wages.

There is a colliery in the Ballycastle Union, and another in the Dungannon Union, long worked pretty successfully, but only for home consumption. A woollen factory, promising to succeed, has recently been established at Hillsborough in the Lisburn Union. Flax-dressing mills, wrought both by steam and water, are very general.

Kelp is still manufactured to a considerable extent along the seacoast of Down and Antrim, and an extensive salt mine is worked at Carrickfergus. There are also large iron foundries, flour mills, distilleries, breweries, felt works, brick and tile works, ship-building yards, rope-walks, and granite and sandstone quarries.

XIII.—*Q. "Does the labouring population in your district go over to England or Scotland for harvest or manufacturing work; and if so, to what extent?"*

Within the present century, and especially since the introduction of steam-vessels has given such facilities of intercourse, the people have gone over, sometimes by hundreds in a single steamer,

to Scotland and England, both for the hay and grain harvests; but very few indeed now go on this account. A number, however (not large from any particular district), emigrate in the same directions, with a view of taking permanent employment in public works or factories. The change, in this respect, appears to have been caused, partly from decrease of the population, and partly from the increased demand for labour, and the consequent augmentation of wages, which have risen within the last twenty years, in the proportions of from 50 to 100 per cent. in this country. For all, with the exception of the idle, the dissolute and the drunkard, there is usually full employment, at good wages, except in particular seasons of commercial depression, the employers complaining that labourers are both scarce and expensive. I may observe, with reference to this part of the subject, that considerable amounts of money have been deposited in the various savings banks throughout the district.

In conclusion, I may observe, that the several topics embraced in the Chief Secretary's letter, have received various, and in some instances, conflicting replies, as coming from different properties and various localities, and as contemplated from different points of view, by landlords, agents, tenants, and others; but I have carefully examined and compared the numerous returns, received from all quarters, with the aid of my own personal knowledge of the subject; and the most correct general results which I have been able to arrive at on the facts of the case merely—exclusive of any opinions, which do not appear to fall within the scope of the inquiry intrusted to me—are now, in accordance with your instructions, submitted, with all deference, for the information and consideration of His Excellency the Lord Lieutenant. And I shall only add, that for the sake of convenience I have subjoined brief general answers, in as correct a form as I am able to supply, on one of the query sheets employed in the investigation, which is annexed hereto, by way of recapitulation.

I have the honour to remain,
Gentlemen,
Your obedient servant,

ALEX. KNOX,
Medical Poor Law Inspector.

To the Commissioners for Administering
the Laws for the Relief of the Poor in
Ireland, &c., &c.

RECAPITULATORY ABSTRACT.

I. *What is the general practice in your neighbourhood as to making improvements on farms, such as:—*

1. *Building of farm houses and offices, and extensive repairs of these, such as roofing?*

In some instances, and on particular properties done by the landlord; more frequently the buildings are made and kept in repair by the tenants, in many cases assisted by the landlords in slates, timber and money, or allowance in rent.

2. *Drainage?*

Main or arterial drainage in great part by the landlord; farm drainage more usually by the tenants alone, or on many properties with the assistance of the landlord.

3. *Reclamation of land?*

None to any extent; but what is done, is usually executed by the tenant, the landlord, however, making a recompense, either by giving a lease at an abated rent, or, in case of tenants-at-will, only charging a nominal or low rent for a given number of years.

4. *Fencing, iron gates, &c.?*

Boundary fencing by the landlord; farm fencing usually by the tenants, at their own cost, but on various properties assisted by the landlord.

5. *Planting?*

Any extensive detached plantings are made by the landlord.

Homestead and farm planting usually by the tenants, the landlords on some of the principal estates contributing the trees.

II. *Whether any of these, and if so which, are executed at the cost of the landlord, or whether they are done by the tenant at his own cost; and in the latter case, whether the tenant has by custom or practice any security for the value of his improvements, either by guarantee or understanding, that he will receive a fair proportion in the event of eviction or surrender, or by guarantee of undisturbed enjoyment of the effects of his improvements for a certain definite period?*

The preceding replies will show, that to a greater or less extent, there is a division of the cost, the relative proportion of which it would be difficult to specify.

III. *Whether in either case the annual rent is usually increased?*

Not usually or expressly with a view to the improvements solely, but in various cases the rent is increased from different causes, as the lapse of old leases, general advance in prices, and the high rate at which property is bought on some estates. It is customary to have a general revaluation at the end of a given number of years (20), and it is difficult to see how the improved condition of the farms could be altogether left out of view in an estimate of their actual value.

IV. *Whether there are many instances of tenants losing altogether the value of improvements effected at their own expense through eviction or disproportionate increase of rent?*

I think such instances are very rare, but exceptional cases may occur, on transfer of property.

V. *Whether improvements are on the increase or declining?*

On the whole, increasing, but not so rapidly of late.

VI. *To what extent have the dwelling-houses, offices, fences, roads, reclamations, works of drainage, plantations, &c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and in fact constituting those farms, as distinguished from waste land, been created by the present or former tenants, or by the present or former landlords respectively?*

As regards recent times, this question has been answered in the replies to the six first queries. Materials do not exist, or at all events they are not available, for a correct and accurate reply as regards times gone by.

Old leases generally show, that the improvements in question were done under express contract by the tenant, in consideration of the covenants contained in the lease, and in executing them he merely fulfilled his bargain. The farms and appurtenances, as they now exist, have acquired their present value gradually, in the lapse of years, at the expense, as I think, both of the former and present landlords and tenants, but I am not in a position to apportion the cost at all accurately between them, or to state the relative amount of improvement effected in the present as contrasted with former times.

VII. *Whether notices to quit are of frequent occurrence; and if so, are they generally followed up?*

Now very infrequent on most properties, though not in all, but rarely issued except for exceptional causes, most usually for the non-payment of rent, and very seldom followed up, if a settlement of the rent be effected.

VIII. *Whether the Ulster Tenant-right custom is in existence in your district; that is to say, whether any payment is made to the out-going tenant, with or without the consent of his landlord, for disturbance or good-will, irrespective of compensation for improvements actually made by the tenant, or by preceding tenants?*

The tenant custom is in almost universal use in my district, so far as payment being made to the out-going tenant, but I do not think on any separate calculation of the respective value of the good-will, and the improvements.

IX. *If such a custom exists (i), whether it is confined to tenants holding at will, or extends to lease-holding tenants; (ii), whether it can be defined and a value set upon it at so many years' rental, or at so much per acre; (iii), whether the custom, if it exists, is spreading and gaining ground in your district so far as your experience goes?*

(i.) It extends to both.

(ii.) It cannot be defined, being arbitrary, varying with time, locality, and other circumstances; and no fixed price either by the acre or rental can be put upon it.

(iii.) Statements on this point vary, but although on some estates attempts have been made to restrict it, I do not think it is decreasing; probably it might be correctly described as stationary.

X. *Has it come within your experience that dowers, portions for younger children, or the like, have been charged by tenants-at-will upon their temporary occupations?*

The charge of dowers and provision for the younger members of families is a prevalent practice over the whole district.

XI. *Does manufacturing industry, either on a large or small scale, prevail or exist in your district, meaning by the latter, handloom weaving, shirtmaking, or other non-agricultural occupation of whatsoever sort?*

Manufacturing industry, on a large scale, is very prevalent in the counties of Down, Antrim, Londonderry, Armagh, and Tyrone.

Handloom-weaving, shirtmaking, and muslin embroidery, are also very common in different parts of the district.

XII. *Does the labouring population in your district go over to England or Scotland for harvest or manufacturing work; and if so, to what extent?*

They formerly went over in great numbers, but the practice, as far as harvesting is concerned, has nearly ceased, owing to the equalization of wages. Some still go (but not in numbers), for permanent employment in public works and factories, &c.

ALEXANDER KNOX,
Poor Law Inspector.

January 18, 1870.

XI.—REPORT FROM DR. HILL.

DISTRICT comprising parts of the COUNTIES of CAVAN, DUBLIN, KILDARE, KING'S COUNTY, LONGFORD, MEATH, QUEEN'S COUNTY, ROSCOMMON, and WESTMEATH.

3, Seaview-terrace, Donnybrook,
27th January, 1870.

GENTLEMEN,—With reference to your letter, No. 30,290, dated the 2nd ultimo, enclosing a copy of a letter received by you from the Chief Secretary of His Excellency the Lord Lieutenant, communicating the desire of His Excellency to obtain through the Poor Law Inspectors, in a brief space of time, information on various points relative to the position of the occupiers of land in Ireland, I have the honour to submit to you the following report on the subject:—

In the letter of the Chief Secretary it is stated, that the main object in view is to ascertain to what extent the dwelling-houses, offices, fences, roads, reclamations, works of drainage, plantations,

&c., whether large or small in extent, humble or important in character, now existing upon farms in Ireland, and, in fact, constituting those farms as distinguished from waste land, have been created by the present or former tenants, or by the former or present landlords respectively.

Information is also requested as to various other points connected with the existing relations between landlord and tenant, such as the security for the value of the tenants' improvements, the frequency of evictions, the existence of the Ulster tenant-right, the prevalence of manufacturing industry, and the number of the population in the Inspector's district who go over to England or Scotland for employment.

With a view to obtain the most accurate and extensive information possible within the time available, I issued 275 circulars containing questions relating to the various subjects referred to in the Chief Secretary's letter. These circulars were addressed to landlords, agents on estates, tenant-farmers, dispensary medical officers, clerks of unions, poor-rate collectors, and other persons residing in my district of inspection. Up to the present I have received 180 replies, a large proportion being from intelligent tenant-farmers, and from them have compiled the information which I beg to offer on the points in question.

The twelve unions comprised in my district include parts of the counties of Dublin, Meath, Kildare, King's, Queen's, Westmeath, Longford, Cavan and Roscommon.

In a tract of country extending nearly from the eastern coast of Ireland to the province of Connaught, it may naturally be anticipated that diversities in the relations between landlord and tenant will exist; and not only will this be found to be the case, but it will be seen that the relations vary in different parts of the same county or union, according to the character and disposition of the landlords or their agents on the one hand, and of the tenants on the other.

According to returns recently received from the clerks of unions, there are 46,947 agricultural holdings in my district, of which 36,122 are tenancies-at-will, and 8,779 are held under leases, the remainder being holdings in perpetuity or in fee.

Improvements on farms.

Buildings.

As regards the dwelling-houses and offices existing upon farms, such buildings may be divided into three classes:—firstly, those consisting of mud walls and thatched roofs; secondly, those with stone walls and thatched roofs; and thirdly, those with stone walls and slated roofs. Buildings of the first class are generally occupied by tenants-at-will, either small farmers or labourers; in most instances they have been erected by former tenants, and often are in a very wretched condition. The repairs of such tenements are almost always made by the tenants at their own cost or with their own labour, but occasionally the landlord supplies rough timber for roofing when required. Houses and offices of the second class are increasing in number, and are usually occupied by tenants-at-will or small farmers having leases; many of them afford very comfortable accommodation. These buildings have usually been erected by either a former or

the present tenant, but on some estates partly by the tenant and partly by the landlord—the former furnishing the stones and bearing the cost of the labour, the latter supplying timber for the roof. The repairs of such buildings are generally effected by the occupier at his own expense, except by special agreement to the contrary. Leaseholders seldom receive any assistance from the landlord in maintaining their houses and offices in repair. Houses and offices built of stone, with slated roofs, are sometimes built altogether by the landlord at his own expense. When this occurs the rent of the tenant is proportionably increased. In some instances the walls and general masonry are constructed at the cost of the tenant, the landlord supplying timber and slates for the roof. In other cases, a tenant on obtaining a lease is bound by its terms to build a slated house and offices on his farm, and does so, without any assistance from the landlord. Houses and offices of this description are, for the most part, in the occupation of large farmers or leaseholders, and the prevailing practice, as regards repairs, is, that they are executed by the tenant. I know of several instances in different parts of my district where leaseholding tenants have expended considerable sums in building houses, offices, mills, &c., and keeping them in repair at their own expense. On some estates it is customary for the landlord to contribute in money to any improvements affecting the buildings on a farm, provided that the plans have been submitted to or approved by him or his agent, and to charge the tenant interest at £5 per cent., in addition to the rent, on the whole, or in some cases on only the half, of the sum of money advanced.

Drainage.

On large farms and on lands held under long leases drainage is usually executed by the tenant; where the holdings are small and in the hands of tenants-at-will it is seldom that any efficient drainage is undertaken. In general, thorough drainage to any extent is rarely performed by the tenant alone; but many localities in my district have been much improved in this respect within the last twenty years by the mutual co-operation of landlords and tenants; the former advancing the capital on fair terms, the latter fulfilling their engagements with punctuality, and pursuing a more liberal course of farming, Arterial drainage is probably, in all cases, executed, in the first instance, at the expense of the landlord. Many proprietors have borrowed large sums of money from the Government during the last fifteen years, and expended them in drainage and other improvements on their estates, and some are still carrying on extensive works of this description; a per-centage of about £5 on the outlay, being usually charged to each tenant whose land is benefited, in addition to the ordinary rent.

Reclamation.

Whatever reclamation of bog or mountain land has been effected in my district has chiefly been the result of the labour of former tenants, extending over a period of many years past. Within the last ten or twelve years very little reclamation has been attempted by tenants. In a few instances only have works for the express purpose of reclamation been undertaken by landlords. In one

case, in the King's County, a tract of moorland which had been let at 3*s.* per acre, and was thrown up by the tenant about twelve years ago, has been reclaimed by the landlord, and is now let at 40*s.* per acre.

Fences. Fences separating fields on a farm are, in nearly all instances, the work of the occupier; they have been constructed by former, and are kept in repair by the present tenants. Over a large portion of the country they are not of the best description, being merely sufficient to prevent the trespass of cattle. Boundary fences between estates and along the sides of high roads have sometimes been made by the landlords, and are kept in repair with his assistance.

Gates. Iron and wooden gates are almost always supplied by the tenants. On some few estates in the counties of Meath, Westmeath, Longford, and King's County, they have been given by the landlords, but such is not the prevailing practice.

Roads. Farm roads always are, and so far as I am informed, always have been made and kept in repair by the tenant; other roads are constructed and repaired at the expense of the county, and the county cess is paid by the occupier. It has been a subject of complaint that the tenant has not only to bear the cost of making and repairing the public roads, but, in many instances, to pay rent for the land which the roads occupy.

Planting. Planting is almost exclusively done by the landlord. Tenants-at-will rarely undertake anything of the kind; and any leaseholder who plants trees registers them. Such appears to be the prevailing practice throughout my district.

Security for the value of improvements made by the tenant. As regards improvements on farms which have been created by the present or former tenants, excepting cases in which leases exist, a tenant has, in general, no absolute security, by custom or practice for the value of his improvements, either by guarantee or understanding that he will receive a fair proportion in the event of eviction or surrender; or that he will be allowed the undisturbed enjoyment of the effects of his improvements for a certain definite period. His only security is the character of the landlord, or of the agent on the estate. There are, as might be expected, some exceptions; on an extensive property in the county of Meath, containing nearly 9,000 acres, there has been for the last forty years an understanding that in the event of eviction or surrender the tenant will receive a fair proportion of the value of *bona fide* improvements from the landlord. As an instance, a tenant on this estate who had a lease for three lives, or thirty-one years, on the condition that he should build a suitable house, received from the landlord, when he surrendered the farm, the amount which he had expended on building the house. In most parts of my district the tenants are aware, and admit, that so long as they pay their rents they are not likely to be disturbed in their holdings. Evictions rarely occur except for non-payment of rent, and then there is usually an arrear of one or two years due, which in most cases covers the value of any improvements left by an embarrassed tenant. But in the event of eviction or

surrender it is not unusual for the landlord to give the outgoing tenant something, or to allow him to dispose of his good-will to his successor. Very recently a landlord in the county of Westmeath evicted a tenant from whom he had received a threatening letter demanding a reduction of his rent. The valuation of the farm was £26 per annum and it was let at £28; on eviction the tenant was allowed £160 by the landlord.

Increase of annual rent.

With reference to the question whether the annual rent is usually increased in consequence of improvements effected by either the landlord or the tenant, it appears that it is the usual practice to increase the rent of the tenant by charging interest at about £5 per cent. on money expended by the landlord in drainage or advanced by him for the erection of houses or offices. The annual rent is also occasionally increased, under various circumstances, in consequence of improvements made by the tenant. In cases of reclamation of mountain land or cut-away bog, it is the usual practice to charge no rent for some years, then to charge from 7*s.* 6*d.* to 10*s.* per acre, according to the valuation of some competent person. On some estates, in different parts of my district, revaluations of farms have taken place more or less frequently, and the rents have been increased. When a farm becomes vacant, the land is often revalued and let to the succeeding tenant at an increased rent; or, on the expiration of a lease, it is not an uncommon occurrence for the holding to be revalued, and the rent increased on its renewal.

When an estate changes owners, by either the death of the landlord or the sale of the property, the new proprietor often has his lands revalued, and the rents raised; the increase in the rental depending, in a great degree, upon the tenants' improvements. The same occasionally happens on a change of agents.

In some instances the rents were lowered during what are termed the bad times, as from 1847 to 1850, and have since been raised to their original amount. I have also known instances where tenants-at-will, who had been for many years in occupation, have been offered leases of their holdings at a considerably advanced rent, and gladly accepted them.

The increase in the annual rent, based, as it is usually alleged to be, on the improvements effected by the tenant, appears to be the chief grievance complained of by occupiers of land in my district. It may be remarked, however, that it is sometimes difficult to distinguish the additional value which the tenant's capital or labour may have given to a farm, from the generally increased value of land, resulting from the higher prices of nearly all kinds of agricultural produce—amounting to 30 or 40 per cent. during the last twenty years—and other circumstances wholly independent of improvements by either landlord or tenant.

Loss of the value of tenants' improvements through eviction or dispro

Of late years there have not been many instances of tenants losing the total value of their improvements through eviction; but such cases have occurred in my district. On one estate in the county of Longford a considerable number of evictions took place between the years 1850 and 1864, and the persons evicted, who

were tenants-at-will, and had always paid their rents punctually, lost, it is stated, the value of any improvements they had made in their holdings. The last eviction on this property took place about ten months ago, and the family have since emigrated. The bailiff on the estate was shot dead in September last. On another estate in the same county, some years ago, a large number of families were evicted without compensation, it is stated, and their farms consolidated. portionate increase of rent.

These occurrences have made a deep and lasting impression on the minds of the tenantry of this and the adjoining counties, and are constantly referred to as instances of landlord oppression. Isolated cases have occurred in other parts of my district, but not recently, where tenants who had laid out considerable sums on their farms, or in buildings, and who afterwards fell into difficulties, were ejected for non-payment of rent, without compensation for their improvements. It would appear, however, that tenants more frequently lose the value of their improvements through disproportionate increase of rent than through eviction.

Improvements by large landed proprietors and by tenants holding under favourable leases are certainly on the increase in my district. In many instances also improvements by tenants-at-will, who have confidence in their landlords, are on the increase, the circumstances of this class having greatly improved within the last few years, owing to the augmented value of the produce of their farms. But as regards the occupiers of small holdings, generally, the inclination to invest their savings or expend their labour in improvements has, within the last two or three years, been diminishing, in consequence of a feeling of insecurity as to the relations between them and their landlords. Increase or diminution of improvements

Notices to quit are not now of frequent occurrence in any part of my district; they are seldom served except for non-payment of rent, and are rarely followed up, the tenant usually succeeding in procuring the required amount in sufficient time to prevent eviction. Notices to quit

They are sometimes had recourse to in order to effect what the landlord or agent may consider a better division of land, or to put an end to disputes between neighbours, and are not followed up when the object is attained. I have been informed of instances where notices to quit have been served on tenants for arrears of rent extending over two or three years, and the landlord was glad to pay the insolvent tenants for giving up possession—not on the ground of value for improvements, but to secure immunity to himself and the incoming tenants. It is a matter of notoriety that in many parts of my district, notices to quit cannot now be served upon a tenant without considerable risk to either the landlord, the agent, or the bailiff. A tenant-farmer, writing to me from the county of Westmeath, states:—"Notices to quit are seldom thought of; the bullet of the assassin would settle that question." Another of my correspondents, residing in the same county, writes:—"Notices to quit are become nearly obsolete—indeed they are now entirely unknown, thanks to the spirit of

the people, and the fear which they have inspired in their oppressors through a certain little instrument to some of them but too well known."

Ulster tenant-right.

The Ulster tenant-right custom can scarcely be said to exist, in a recognised form, generally in my district. It prevails to a considerable extent in the county of Cavan, and appears to be creeping in, in a more or less modified form, in several other counties. In many parts of the country, a tenant is permitted, as a favour or privilege, to dispose of his interest or good-will in his holding to a person approved by the landlord or agent, irrespective of compensation for improvements made by the tenant. In other cases, where a tenant is in arrear and about to surrender his farm, he is allowed to dispose of his interest in it, on the best terms he can obtain, to anyone approved by the landlord, on the condition that the arrears be discharged out of the purchase-money, the balance going to the tenant. Sometimes the landlord himself becomes the purchaser of the good-will, in order to get rid of a troublesome or obnoxious tenant, and to secure immunity to himself.

When a tenant is desirous of emigrating, it is not unusual for a landlord to allow him to sell his interest or good-will; but the landlord's consent must previously be obtained.

On some estates, a tenant wishing to dispose of the interest in his holding is permitted to do so, the landlord reserving to himself the choice of a tenant from among the bidders. There are, besides, instances where an incoming tenant gives the outgoing tenant a sum of money for his good-will, irrespective of the value of improvements, and without the consent or knowledge of the landlord; and in many parts of my district, if this be not done, a bad feeling is excited, and threatening notices or even worse outrages are the result.

The practice of selling the interest or good-will in a holding, with the previous consent of the landlord, is not confined to any particular class of tenants, but is much more usual among tenants-at-will. Leaseholders are in the habit of selling or assigning their interest without the consent of their landlords, except when prevented from doing so by restrictive clauses in their leases.

It is difficult to determine the value set upon the custom in such cases. There does not appear to be any fixed standard of compensation with reference to either the extent or the rental of the farm; but in general a higher rate, in proportion, obtains in the case of a small holding than of a large one. The amount paid to the outgoing tenant also depends on the quality of the land, the locality of the farm, and the character of the landlord. Where the custom is permitted, the sums paid for the good-will vary from £4 to £20 per acre; the latter sum being sometimes given for small holdings in the vicinity of towns.

On several large estates in the King's and Queen's counties, in Meath, and Westmeath, the custom of selling the interest or good-will in farms was formerly permitted, but of late years has been discouraged by the present landlords.

Nevertheless, the practice, as above described, seems to be gradually extending and gaining ground under the influence of public opinion. It is not looked upon, however, as absolute tenant-right, inasmuch as any payment made to an outgoing tenant for disturbance or good-will, without the landlord's consent, would not establish a claim to occupancy.

Dowers and portions for younger children.

Dowers and portions for younger children are not so frequently charged by tenants-at-will upon their temporary holdings in my district, as in some other parts of Ireland. But it does occasionally happen that where a tenant has been a long time in occupation, has saved money, and has confidence in his landlord, he makes some kind of testamentary disposition of his effects, leaving portions to his daughters, or charging the profits of his farm with various small sums to be paid by his successor to the widow and younger children. Such directions are usually carried out faithfully, and sometimes to the serious embarrassment of the successor. Landlords in general seldom interfere in these family arrangements, provided that the land be not subdivided, or an unfair disposition of the farm and effects, likely to lead to litigation, attempted.

Manufacturing industry.

In my district the population is nearly altogether engaged in agricultural pursuits. Generally speaking, very little manufacturing industry, either on a large or small scale, exists in that part of Ireland. Formerly manufactories of various kinds gave employment to a large number of hands in the neighbourhood of Mountmellick and Mountrath, in the Queen's County; and handloom weaving to a considerable extent was carried on in the cottages of the peasantry; but within the last few years the manufactories have been closed, and handloom weaving is nearly extinct in those localities. At Clara, in the King's County, however, there are at present rather extensive manufactories of jute, giving employment to a considerable number of young people in making sacks, besides large flour mills; and at Tullamore, in the same county are a distillery, brewery, tan yards, and a tobacco manufactory. Here and there a woollen manufactory for making frieze, tweed, or stockings, or a flour mill has been built and a few handloom weavers, who are patronized by the neighbouring farmers, are scattered over the county.

Flax scutching-mills have also been erected in different parts of my district.

Shirtmaking, embroidery, and other non-agricultural occupations have almost entirely disappeared.

Migration of the labouring population to England or Scotland.

The population has been so much diminished during the last twenty-three years by famine, fever, and emigration, that in many parts of the country agricultural labourers have become comparatively scarce, and it is not now so common as formerly for them to go over to England or Scotland for harvest or manufacturing work. The increase in the rate of wages in my district—about 50 per cent.—during the same period, has, moreover, removed in some measure the inducement to seek employment at a distance, particularly as in harvest time a good agricultural

labourer can usually obtain at home nearly, if not quite double, the ordinary amount of his daily wages. In the western and midland parts of my district, however, a few labourers and small farmers—from 3 to 5 per cent. of the labouring population—still repair to England or Scotland for harvest work; and, probably about the same number annually leave Ireland, and settle in the manufacturing districts of England or Scotland.

I have the honour to be, Gentlemen,
Your obedient servant,

JOHN HILL, Inspector.

To the Poor Law Commissioners,
Dublin.

DUBLIN: Printed by ALEXANDER THOM, 87 & 88, Abbey-street,
For Her Majesty's Stationery Office.

Fisheries (Ireland)

[C. 225] Report of the Inspectors of Irish Fisheries on the Coast, Deep Sea, and Inland Fisheries for 1869.

The above, being a folio paper, will be found in Vol XVII.

PALL MALL

REPORT

ON THE

COAST AND DEEP SEA FISHERIES

OF

IRELAND.

BY

THE ROYAL COMMISSIONERS ON IRISH OYSTER FISHERIES.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1870.

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The following letter from the Under Secretary for Ireland was addressed to the Chairman of the Royal Commission on Oyster Fisheries, in reply to a communication from the latter, stating that if the Lord Lieutenant desired, the Commissioners would be willing to furnish a Report on the Sea Fisheries, in addition to the Special Report on the Oyster Fisheries :—

Dublin Castle, August 20, 1869.

Sir,—I am directed by the Lord Lieutenant to acknowledge the receipt of your letter of 18th instant, and to state, in reference thereto, that although the control of the Deep Sea Fisheries is not vested in His Excellency until the 1st October, 1869, yet he will be glad to be favoured with any report and suggestions which the Royal Commissioners on Irish Oyster Fisheries may think fit to make to him relating to the Coast and Deep Sea Fisheries, provided that no additional cost or delay be thereby involved.

I am, sir, your obedient servant,

T. H. Burke.

To John Aloysius Blake, esq., M.P.,
Chairman,
Royal Commission, Irish Oyster Fisheries.

REPORT

OF

THE COMMISSION

ON THE

SEA FISHERIES OF IRELAND.

TO HIS EXCELLENCY JOHN POYNTZ, EARL SPENCER, K.G.

LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

MAY IT PLEASE YOUR EXCELLENCY,

WE the Commissioners appointed to inquire and report on the Oyster Fisheries in compliance with the intimation we received in the Under Secretary's letter of the 20th August, 1869, that your Excellency would be glad to be favoured with any report and suggestions which we might think fit to make, relating to the Coast and Deep Sea Fisheries, beg to report—

That our duties having obliged us to proceed around the entire coast of Ireland, we visited nearly all the fishing stations of importance, and most of the minor ones.

Having had the advantage of the use of Her Majesty's yacht *Vivid* we were enabled to make a tolerably close investigation into the subject of the fisheries, both by personal observation and examining in various localities the most competent witnesses.

We are therefore in a position to furnish your Excellency with accurate general information respecting the past and present state of the sea fisheries, the condition of the people engaged in them, and the means which would in our opinion be calculated to promote that valuable industry.

In many important respects Ireland appears admirably adapted for the successful prosecution of sea fisheries.

Considering the area of the island, the extent of coast which it possesses is probably beyond that of any other maritime country in the world, being estimated at 2,500 miles.

This is owing to the numerous indentations, which form important bays, estuaries, and creeks.

Many of these, besides affording good natural harbours for fishing craft, offer inducements for fish to resort to them. Off the coast there are several banks which are greatly frequented by fish as feeding grounds.

Irish Fisheries in former times.

From a very early period Ireland appears to have been noted for the large quantity of fish resorting to its shores. This is said to have been one of the reasons that induced the Danes to attempt the subjugation of the country. From the Norman conquest down to the commencement of the seventeenth century the English sovereigns derived a considerable revenue by granting licences to foreigners to fish in the Irish seas. Besides the sums received from individual fishermen of different nations, the Dutch gave Charles the First £30,000 for the privilege of fishing off the west coast. In 1556 Philip the Second of Spain agreed to pay £1,000 a year for twenty years for permission to fish on the northern coast, and in 1650 Sweden, in recompense for services to England, was permitted to send 100 vessels to the Irish fisheries.

During the fifteenth and sixteenth centuries the English and Scotch fishermen preferred fishing on the Irish coast to their own, and in spite of much opposition the native fishermen appear to have prosecuted their calling most industriously and successfully.

Much jealousy seems to have been excited against them on the part of the English fishermen. During the Commonwealth several petitions were presented to the Cromwellian Parliament from Yarmouth and other English fishing stations, praying that "the Irish fisheries might be discouraged, on account of the great injury the competition of Irish fishermen proved to the trade of Englishmen abroad, especially in Spain and the Straits. One of the petitions stated 'that there was sometimes to be seen at Wexford 200 sail of vessels—English, French, and Dutch—taking in fish cargoes from the Irish; and that if this be permitted, it will be folly to catch herrings in the English Channel, in the hope of sending them to Spain, &c., for profit, as the cost of a barrel of such fish at Yarmouth was double that at Wexford.'"

The request was complied with, as according to Prendergast's "Cromwellian Settlement of Ireland," the fishermen and gillers of the herring were to a great extent exterminated by the *transplanting law.*

The Fisheries discouraged.

Later on the interference of Parliament was again sought to repress the enterprise of the Irish fishermen.

Lord Dufferin in a recent able work on Ireland states :—

"An amusing instance of the feeling that Ireland was to be sacrificed to England is mentioned by the author of the Commercial Restraints of Ireland. In 1698 two petitions were presented to the English House of Commons from the fishermen of Folkstone and Aldborough, stating that they were injured by the Irish catching herrings at Waterford and Wexford, and sending them to the Straits, and thereby forestalling and ruining the petitioners' markets."

Unfortunately the efforts to discourage this branch of Irish industry we find were continued to a very recent period.

Early in the present century the Marine Society of London

formed a company with a capital of £50,000 to fish the Nymph Bank off the Waterford coast. No Government aid was asked beyond assisting to pass the Bill necessary to enable the Company to proceed with their operations.

Its fate is described in a late work on the Irish Fisheries.*

"The Bill was introduced by Sir William Geary.

"Everything promised well until the English fishing interest became alarmed at the prospect of even a part of the Irish fisheries being developed to a large extent. Petitions against the Bill poured in from fishing communities, including Harwich, Gravesend, and Faversham, and this measure, so calculated to secure many important and beneficent purposes for Ireland, was thrown out by a small majority on the second reading, on 27th March, 1804, being ordered to be read that day six months. In allusion to this Mr. Fraser, who was appointed by the Royal Dublin Society to report on the fisheries, truly remarked :—'The fate of this Bill was much to be regretted. As an undertaking, conducted by the public spirited and enlightened characters who were its authors, it could not have failed to have produced not only an additional supply of fish to the inhabitants of the metropolis, but would very probably have led to similar establishments in other places, thereby forming additional nurseries for seamen and for the navy, and on that account it was deserving of the countenance of the House and Government.' The Marine Society were so disgusted and disheartened at the manner that their benevolent and public spirited efforts were treated, and the enormous charges they were put to in the fruitless effort to carry their Bill, as well, probably, as an apprehension of renewed opposition from the representatives of English fishing constituencies, that they could not be induced to make another application to Parliament.

"It would be very difficult to estimate the great blow which Parliament inflicted on the Irish Fisheries by preventing this Company being formed.

"The wonderful resources of the Nymph Bank could only have been developed by such an enterprise as Lord Romney and the Marine Society contemplated. Had it succeeded (as there is every reasonable ground for supposing it would), other undertakings of a similar character on other parts of the coasts would probably have been attempted, and the fisheries thereby raised to a flourishing condition."

Again, in 1838 a Bill was introduced by the then Chief Secretary for Ireland (Lord Morpeth) and the Attorney-General (Mr. Sergeant Wolfe) to give effect to some remedial measures for the fisheries suggested by a Commission appointed in 1835 by the Lord Lieutenant to "inquire into the state of the Irish Fisheries, the laws affecting, and the means and expediency of extending and improving them."

Its fate is thus described in the same work :—

"This measure contained some provisions calculated to advance the fisheries, especially those with regard to loans. Adverse influences were, however, successfully employed to defeat it; amongst them petitions against it were presented from Scotland. It was committed for 16th of May, 1838, but was deferred nearly three times a week, until 23rd of July. On the day before a deputation from Scotland, headed by the

* "The History and Position of the Sea Fisheries of Ireland, and how they may be made to afford increased Food and Employment." By John A. Blake, M.P., author of the "Inland Fisheries of Ireland."

Duke of Sutherland, waited on the Government to endeavour to induce it to abandon the Bill, and on the following day it was postponed for three months.

"There are quite sufficient grounds to justify the belief that the interests of the Irish fishermen on that occasion were sacrificed in order to appease the jealousy of Scotland, the apprehension being that if they became prosperous, they might possibly interfere with the Scotch fisheries then receiving considerable encouragement from Government.

"It is much to be regretted, and indeed is a deep reproach to the Irish members of that day, that the several postponements of the Bill, and even its final withdrawal were suffered to take place without a determined remonstrance."

The Fisheries under Encouragement.

In 1819 it was resolved to extend to Ireland the same system of bounties and other encouragement which had been for some time previously in operation in England and Scotland.* The result is thus described by the same author:—

"In 1819, an Act was passed appointing a new Board for the management of the fisheries, and investing them with considerable powers.

"It consisted of twenty unpaid commissioners and the following salaried officers:—a secretary, three clerks, four inspectors-general, one local inspector, and nineteen local inspectors. The annual cost of salaries was £3,249 5*s.* 3*d.*, besides allowances for travelling to inspectors.

"When the board commenced its operations, the boats and men had considerably declined from the numbers engaged some time previous to the Union.

"The operations of the board consisted in the improvement and construction of fishing harbours, the granting of tonnage bounties, and bounties on capture, cure and export, and for a short time the granting of small loans for the purchase and repair of boats and gear. Informa-

* Although the sum given by the Irish Parliament for the encouragement of the fisheries was very small, yet it had the effect of inducing some thousands to enter on the pursuit. The result was most beneficial, as shown by the large amount of fish captured, and the number who continued to follow fishing.

From the Union up to 1819 there was a small bounty given for vessels of a certain class; for some reason it appears to have only been availed of by twenty-seven in that year. The next year the larger encouragement came into operation, and the following table will show with what results:—

Number of Vessels in Receipt of Bounty and the Amount paid.

Year.	No. of Vessels.	No. of Men.	Bounty.
			£ *s.* *d.*
1819	27	188	573 19 5
1820	119	755	4,260 8 6
1821	4,889	21,422	14,150 9 2
1822	28,380	44,892	19,461 12 11
1823	27,142	49,448	27,621 9 11½
1824	10,882	52,482	30,642 11 9
1826	10,823	57,809	18,719 7 3
1827	12,025	58,044	13,593 15 6
1828	12,126	59,321	12,162 15 6
1829	12,611	63,421	10,203 14 6

tion was also afforded by the inspectors as to the best mode of fishing and cure, and they also superintended the branding of herrings for export. Whatever may be urged by some political economists against the principle of bounties, the fact is unquestionable that by their aid the fisheries of Ireland were brought to a success thirty years ago which it is very doubtful they would otherwise have attained. There were, undoubtedly, great defects and gross abuses connected with the administration of the system ; there were many errors of management, and very flagrant jobbery was frequently perpetrated under it, both bounties and loans being often used for other objects than those they were intended ; and the cost of distribution and management was disproportionately large for the sum expended (£68,142 12*s.* 10*d.* for salaries).

"Notwithstanding all this, there never perhaps was an instance where the State conferred so much good for a similar outlay (£163,376 7*s.* 10*d.* for bounties).

"In the words of one of the most able, zealous, and conscientious officers connected with the board (Mr. James Redmond Barry) 'it was a period of unexampled industry and prosperity for the fisheries.'

"The 11th and last report of the Commissioners (1830) states the number of vessels and boats as 12,119, and men and boys 64,771. The decrease in fishing craft, whilst there was an increase in the crews, has been accounted for by the number of vessels that gave up fishing in consequence of the great decline which took place in the bounties from 1824.

"The famine of 1822, and the great agricultural distress which pervailed for some years after, drove a multitude of poor people to seek their living by fishing. In many instances a number far beyond what was required for the working joined in the purchase of a small boat, and men were glad to be employed at very low wages in the larger craft.

"As compared with the first year that the Commissioners commenced their operations (ten years previously), the close exhibited wonderful and gratifying results. Instead of 27 vessels and boats and 188 men, there were 215 decked vessels, some of which must have been of large size, as the tonnage, 9,810, represented an average of nearly 28 tons each ; 769 half-decked vessels, 9,457 tonnage, or an average of over 12 tons ; 2,483 open sail-boats, and 9,522 row-boats, making a total of 12,119 vessels and boats, and 64,771 men and boys.

"The increase of capture under encouragement is illustrated in the tables from 1819 to 1829.

"In the former year, being the first of the Board's operations, the total quantity of dried fish produced for bounty amounted to only 40 tons ; in 1822, being the fourth season, there was 1,417 produced ; in 1829, 3,019 tons.

"Herrings produced for bounty in 1819, 1,193 barrels ; ditto in 1824, 41,633 barrels ; in 1829, 16,855 barrels.

"Against the resolve of Parliament to considerably reduce the bounties in 1824, with a view to their total extinction in a few years, the Commissioners strongly remonstrated. They represented that further reductions might be ruinous to a promising source of wealth and industry, and pointed out that the fisheries were not alone a source of employment and food, but also of naval strength—that, whilst at a time when the wretched general state of the labouring poor, without any visible means of support, and the peace of the country scarcely maintained by an Insurrection Act and a large military force, the coast population engaged in the fisheries had escaped the contagion, and not in any instance added to the catalogue of the disaffected.

"In alluding to the comparative state of the fisheries of Ireland and Scotland, the Commissioners justly maintained that the comparison was

most creditable to Ireland, and only asked that the Irish fisheries should have a trial under the encouragement of similar bounties for the same number of years, pledging themselves at the termination to cheerfully accede to their cessation.

"This appeal was not attended with effect, as the reduction in the bounties was proceeded with.

"In 1830, when a total cessation of encouragement was about to take place, the Commissioners, whilst admitting that a difference of opinion existed at the Board as to the policy of the general continuance of bounties, and that it was the belief of some of their most intelligent officers that, although the bounty on hake, haddock, glassen, and herrings might be discontinued with safety, yet that the preservation of the bounty on cod, ling, and conger for four years more upon an annual sinking scale of 1*s.* in the cwt., would be productive of great advantage, because the capture of these fish required boats of large size, fitted to go a great distance to sea, and not likely to be procured unless encouraged by the aid suggested.

"Even this suggestion, of so moderate a character, was disregarded. It was contended that, as State aid was to be discontinued in England and Scotland, that it ought to be discontinued in Ireland also.

"The difference of the condition of Ireland as compared with England and Scotland seemed to be altogether lost sight of, suffering as the former was from two seasons of great scarcity within ten years. The circumstance of Scotland having received for her fisheries, from 1809 to 1829, £1,189,744, whilst Ireland did not receive more than £330,000 during the same period, being a difference of *over eight hundred and sixty thousand pounds in favour of the former in* 20 *years*, also seems to have been ignored.

"Besides all this, Scotland had the entire advantage of the funds and efforts of the 'British Fishery Society' from 1780 for the promotion of its fisheries.

"Although the bounties were discontinued in Scotland the same time as in Ireland, the former continued in possession of every other advantage; an efficient Fishery Board and a staff of officers were kept up, the branding system continued, and £500 a year given for repairing the boats of poor fishermen, Ireland (though participating later by some years than Scotland in the extended bounty system) was denied any of the benefits continued to the Scotch fisheries.

"The anticipation expressed by the Commissioners in the foregoing was doomed to be disappointed. The even small boon of allowing a fund to continue in operation, formed partly out of *savings from the Parliamentary grant for the promotion of the Irish* fisheries, and partly out of a charitable contribution for the express purpose of loans (which Government was morally bound to continue to administer), was not only peremptorily refused, but such active measures were taken to enforce the immediate payment of outstanding loans, that many poor persons were seriously distressed; besides which, Government had eventually to relinquish a large portion, which probably would have been recovered ultimately if the fund had been allowed to continue its useful operations.

"Nothing can illustrate more forcibly the flagrant injustice and culpable neglect with which Ireland was treated with regard to her fisheries, than the proceeding of the Legislature in 1830.

"The same Act which abolished the Irish Board, together with all encouragements continued (as has been already stated) the Scotch one, with its numerous and efficient staff of officers for inspection, and instruction of fishermen, retained the branding system (thus giving an enormous

advantage over Ireland in the export of fish), and provided a fund for the gratuitous repair of poor fishermen's boats.

"From House of Commons' returns (1842), Scotland appears to have received in 12 years, from 1829, £192,977 in Government grants for her fisheries, whilst Ireland, during the same period and for some time after, may be said to have received nothing; and under very adverse circumstances, her struggling fisheries were left to shift for themselves.

"The Irish Fishery Department became nominally a branch of the Board of Inland Navigation, but practically it was extinguished, as the duty which devolved on the latter in respect to the fisheries was only to wind up the business of the former board. The effect of the premature withdrawal of all encouragement, and the total neglect of the fisheries soon became apparent. Within six years the vessels and boats had reduced by 2,358, and the crews by 10,562; the total number of the former amounting to 10,761, and the latter to 54,119."

The Fisheries under the Board of Works.

In 1842 the management of the fisheries was transferred to the Board of Works. Very few useful powers were however given to this body. Except for the payment of salaries and contributing a portion of the cost of the construction of approved fishery piers and harbours, no funds whatever appear to have been provided for any matter connected with the fisheries.

Although it is rather extraordinary that in repealing the several Fishery Acts which were then in force, the 5th and 6th Vic., c. 106, s. 1, specially provides—*That nothing shall be construed to repeal any enactments or provisions which relate to piers or quays, or assisting poor fishermen, &c., but that all such enactments and provisions relating to piers or quays, or the assistance of poor fishermen, and all such powers in respect thereof, or of the application of the moneys applicable to such purposes, shall remain in full force and effect.*

The recommendation of the Commissioners of 1836 with regard to loans for the erection of curing houses, &c., and to fishermen for purchase and repair of boats and gear (embodied in Lord Morpeth's bill of 1838), were completely ignored.

Effects of the Famine of 1847 and 1848.

The impetus given to the fisheries by the encouragement from 1820 to 1829, notwithstanding the decline which took place both in men and boats for some years, subsequent to 1830 undoubtedly did much towards stimulating fishing enterprise. Just before the famine, 1846, the number of fishing vessels and boats amounted to 19,883, and the crews to 113,073. From this it is manifest that when the people had the means of developing the fisheries they evinced the strongest disposition to do so. No branch of industry suffered so much from the effects of the famine as the sea fisheries. The Royal Commissioners appointed to report on the sea fisheries of the kingdom, 1866, remark in reference to Ireland:—

"The great decline in the number of fishermen we believe to be wholly due to the famine of 1848, and the subsequent emigration. They shared to the full extent in the sufferings of the famine; and as most of them became physically incapable of going to sea, it was frequently found that men were starving whilst fish was in abundance on the coast. In many parts of Ireland the fishing population has not yet recovered from the depression and ruin caused by the famine, and the subsequent emigration, by taking off the youngest and ablest of the fishermen, and leaving behind the old, the feeble, and the incompetent, has still further operated not only in reducing the numbers, but in lowering the average condition of those who remain behind."

It is a curious fact that, although the coast population declined less in proportion than that of the inland portion of the country, consequent on the famine, yet the decrease in the number of fishermen was relatively greater than that of any other avocation, caused, no doubt, by many of them going to other pursuits. One cause which led to the great reduction in the fishermen was, that most of them held small patches of potato ground, which shared in the destruction which fell on that crop, thus at once depriving themselves and families of one source of support.

Owing to the great distress of the farmers and labourers, as well as to the prejudice against the use of fish with any other kind of food than potatoes, a great decline took place in the demand. Deprived of their chief source of custom, the fishermen were often obliged to leave a large portion of their capture to decay. Few curing-houses existed, and as the prospects of sale, owing to the causes stated, were not encouraging, hardly any purchasers could be found for purpose of cure. The curing stations established by Government out of the charity fund did good at the particular localities they were placed, but they were too few and short in their duration to confer extensive permanent benefit. So broken down by want were thousands of the fishermen that they were physically incapable of proceeding to sea. Numerous instances occurred of the lives of those who made the attempt being endangered (some were actually lost), owing to their utter prostration from want of food having rendered them incapable of managing their boats.

Multitudes had to part with their boats and gear for anything they could obtain to procure the means of appeasing the hunger of themselves and their families.

At last nothing would be advanced on boats and materials, and a large amount of both rotted on the shores.

A great number of those who survived the famine were never afterwards in a position to purchase boats and gear, or repair what remained to them. Those whose friends sent for them emigrated. Several went to other pursuits and dispersed, year by year, the number following fishing becoming less.

Decrease in the Number of Fishing Craft and Crews.

Number of Vessels and Boats, Men and Boys, Employed in the Coast Fisheries, from 1846 to 1868, inclusive.

Year.	Vessels and Boats.	Men and Boys.	Year.	Vessels and Boats.	Men and Boys.
1846	19,883	113,073	1858	11,823	52,101
1848	19,652	81,717	1859	11,881	50,115
1849	18,100	71,505	1860	13,483	55,630
1850	15,247	68,380	1861	11,845	48,624
1851	14,756	64,612	1862	11,590	50,220
1852	11,789	58,863	1863	11,375	48,601
1853	12,381	49,208	1864	9,300	40,946
1854	11,079	49,227	1865	9,455	40,802
1855	11,251	47,854	1866	9,444	40,663
1856	11,069	48,774	1867	9,332	38,444
1857	12,758	53,673	1868	9,184	39,339*

Thus it will be seen that the vessels and boats are now less than half, as compared with 1846, and the crews reduced to nearly a third.

Imports of Fish.

Notwithstanding the diminished population, the fish captured around the coast is so inadequate to the wants of the population, that fully £150,000 worth of ling, cod, and herrings, are annually imported from Norway, Newfoundland, and Scotland, the vessels bearing those cargoes, as they approach the shores of Ireland, frequently sailing through large shoals of fish of the same description as they are freighted with.

Change of Place of Resort by Fish.

This Commission had no means of determining whether there is any falling off in the quantity of fish on the coast as compared with the days when England derived the greater part of her fish supplies from Ireland, and when foreign fishermen swarmed in the Irish ports. We were constantly told, however, of places that were said to be abounding with fish, but little resorted to in consequence of the want of good boats and gear. We had many representations, too, of fish having abandoned certain parts of the coast. In some instances we believe the latter complaints were attributable to the poverty of the fishermen preventing them from successfully pursuing their calling.

No doubt, many of the places which were good feeding-grounds twenty and thirty years ago would probably now be found nearly deserted, and banks which then gave little or no indication of being resorted to might now yield large results. Without appa-

* There must be some error in this return; an increase of 827 men is set forth at Clifden, and only 19 vessels; this would give an average of nearly 44 men to each of the additional vessels.

rent cause, certain descriptions of fish are sometimes found to abandon parts of the coast where they were captured previously—for instance, the haddock in Dublin Bay. This and other descriptions are exceedingly voracious, and, as stated by Professor Allman, the molluscs and other animals on which fish feed sometimes become so exhausted in particular places as to disappear altogether, the cause frequently not being ascertainable. Whether this deficiency of food arises from non-production or excessive consumption is not material. The result, however, is, that the fish go elsewhere in search of "pastures new." Sometimes for years these fresh resorts are not discovered, the consumer losing in consequence as well as the fisherman.

A tolerably good idea of the change which occurs even in a comparatively short time in the resorts of fish will be obtained by a comparison of the state of the fisheries as it is now and as it was in various places thirty-five years ago when the Commissioners appointed to inquire into their condition reported that, from the Shannon to Malin Head (the most northerly point of Donegal) the waters abounded with fish; from Malin Head to Belfast Loch the demand on the industry of the fishermen they represented as even "more steady;" from the Loch of Belfast southward "the waters continued productive." From Carlingford to the Bay of Dublin, as far as Wexford, "complaints were heard of the want of fish;" and "a decline in productiveness" was stated by witnesses to exist on the coast from Waterford to Kerry, which completed the circuit of Ireland.

It is worthy of remark that a portion of the coast which, according to the Commissioners, there was "an asserted scarcity of fish attributed to over-fishing and a destruction of spawn, both imputed to the trawlers," is now (thirty years since) the scene of the most remunerative Herring Fishery in Ireland, and trawling operations carried on in the neighbourhood more extensively than ever. The fisheries of Kinsale, on the south, and at Dingle, on the south-west coast, now so productive, appear not to have been important enough in 1836 to merit notice.

These facts serve to prove the variable nature of fisheries, and the advantages which may be derived from information being obtained of the change of fish from one fishing-ground to another.

Means that should be adopted to develop the Fisheries.

The following extracts from very able articles which appeared some years ago in the *Dublin University Magazine* appear to us so applicable to the present state of the fisheries, and the means that ought to be adopted to develop them, that we are induced to give them insertion:—

"It would appear from some of the clauses in the Fishery Act of 1842, that there was some inchoate intention in the then Government to cultivate the sea. Provision is made in the 17th clause of that Act to facilitate the purchase of land upon the sea-shore, for the purpose of erecting curing-houses; and in the 111th clause, power is given to the

Commissioners to hold meetings, the object of which would appear to be, to scrutinize and investigate as to the best means to be adopted for the extension and improvement of the fisheries, and to acquire information respecting them. But as yet the word of promise has been broken to our hope, and nothing whatever has been done on this head since 1842.

"The sea fisheries may be described as a rich, but uncultivated, waste surrounding our shores. It is obvious that the resources of the sea are vast and inexhaustible as itself, and that the extent to which those fisheries could be profitably worked would be bounded only by the amount of capital embarked in them. The fisheries of every nation that has cultivated them have prospered. We might instance those of Holland, Norway, Newfoundland, or even the British sea-coast fisheries; but we shall keep near home, and confine our observations solely to the latter.

"The Scotch Commissioners conclude their report in a truly gratifying manner, by pointing to the prosperity they have originated; the towns and harbours they have created, the population they have sustained, the industry they have excited, and the boundless resources which lie yet undeveloped before them. The most cursory examination of the lucid and comprehensive documents and reports emanating from the Commissioners of British Fisheries will evidence the great pains and anxiety they have devoted to the improvement of the Scottish fisheries, and the transcendent success which has attended their exertions. In their buoyant and exhilarating report there is but one lugubrious feature: they complain that the export of their cured fish to Ireland was declining. Alas! the bulk of our unhappy population had ceased to eat herrings, or anything else, we fear, and the enormous exportations of that article to Ireland had lamentably declined.

"Let us now take a view of our Irish sea-coast. Behold the roofless cottage—the boat stranded on the beach—the coast almost depopulated—the poorhouse full. How is this? Do the herrings turn tail upon us, or shun our shores? or have the turbot, the sole, and all the finny tribes, forsaken us? No such thing. Is our coast population indolent or cowardly? Believe it not. They want instruction and culture; they want encouragement and aid; but they are not deficient either in courage or in energy. Our fishermen will go to sea in 'cots,' or face the Atlantic surge in 'curraghs' made of canvas, in which the well equipped mariner of other countries would not venture to set a foot. Neither have the fish deserted us; they abound upon our shores or visit our bays in never-failing profusion.

"Can we not imitate this curriculum of industry? We shall proceed to make a few suggestions on this head, as an effort is being made in the present Bill to call forth our dormant industry, and latent wealth, in this land of paralysed resources.

"In the first place, without proper means for development, nothing can be effected or proposed. We have seen how Scotch industry has prospered; but there is a substantial grant for the control and management of the Scottish fisheries, and almost nothing for the culture of our own. The Select Committee of the House of Commons (1849), in reference to the Irish fisheries, have reported to the House, 'That the want of proper funds and effective machinery has constituted an impediment, sufficient of itself to defeat the intentions of the Legislature, by disabling the Executive from giving them their due and practical effect.' We should say, as a commentary upon this passage, and with reference to the unexampled success which has attended the administration of the British fisheries—Give to Ireland the same advantages, and soon a similar scene of prosperity and industry will

develop itself—encouragement, and due and full development of our fisheries, is the just claim which we prefer.

"If a seer, or some sibyl, could be consulted in some Celtic Delos! or at Tara's Hill, or in the shadowy Glendalough, we doubt not the mystic response would be '*employ and educate:*' in these are comprised the elements of our regeneration, and the balm for those social evils which are agitating the land and dispersing our race. In the fisheries there is an unbounded field of industry and employment; we should ardently avail ourselves of it, nor longer incur the responsibility of wilfully neglecting those created things which are so lavishly spread out around us. Let us, then, still cherish the hope that our national resources will be at length impartially developed, and when England shall unfold the scroll, upon which is written, in enduring words, the proud series of concessions made to Ireland by the enlightenment, the moderation, or the sense of justice of the nineteenth century, oh! let not the fair list be tarnished with the words—'Her fisheries neglected.'

"But, we digress: we proceed now to consider those measures which we conceive will be necessary to call into active existence the fisheries of Ireland.

"A grant in aid of a loan-fund to foster and encourage the sea-coast fisheries will be our first requirement: here we are met on the very threshold by the Chancellor of the Exchequer, who buttoning up the pocket of the United Kingdom, declares positively, 'No money:' we answer, then the fisheries must slumber for another century. Sir William Temple, in 1673, reports in his official capacity that the fisheries of Ireland were a hidden mine under water; we proclaim the same thing now, but the mine has never yet been worked on any suitable or national scale. We have exhibited to view, in one locality, a fishing fleet of 200 sail successfully and profitably engaged on our shores, and to procure for our suffering population some share in these their own native fruits, is surely a matter devoutly to be wished for; we shall endeavour, therefore, to suggest something feasible, if possible, something which may be thought practicable—in fact to do business; for while we are debating the matter our people are quitting our shores, or crowding towards the poor-house. If any means can be suggested to put our fisheries in motion, we feel convinced they will go-head from the starting-post, and will be adequate to the due supply of our general population, our provincial towns, and our poor-houses from the coast to the centre, and to export annually 500,000 barrels of cured fish.

"We might, if it were necessary, enumerate a long train of towns, villages, and fishing stations, with which we are familiar along our eastern shores, all of them in the same depressed and neglected state, or the immense resources of the locality known only through the means of rival fishing-fleets. We feel coerced to ask, how it is that we stand with folded arms, and allow our people to seek distant Atlantic shores or Californian mines, when the more wholesome mines of native industry remain unexplored beside them.

"The Bill before Parliament proposes that the Lords of the Treasury be empowered to advance money on loans in aid of the coast-fishing population. This is the pivot upon which the whole question in relation to the sea-fisheries will hinge. Our fishermen cannot emerge from their present state without aid; but where is the aid to come from?

"A grant in aid of the industry of the sea-coast population will be a humane and long-demanded remedial measure, and a safer investment than advances for labour-rates or poor-law unions. If it be asked, what security can the impoverished coast fisherman give—we answer, he can give a mortgage upon the ocean, and draw without limit or restraint

upon the treasuries of the deep. A loan-fund office, with savings-bank annexed, will, therefore, be the only machinery we shall suggest, and a bottomry bond, with sureties, the security. We have little doubt as to the results, or of the validity and efficiency of the security; nor do we fear that our fishing population, temperate as they now are, and industrious and persevering, will have any difficulty in meeting these instalments—nay, we are convinced, they would anticipate their obligations, and place themselves, in a shorter time than the period we have above mentioned, in the position of independent boat-owners, thus becoming useful and serviceable members of the community, no longer a burden upon the poor-rates, and a reproach to the industry of the country.

"The punctuality of the working classes in Ireland, in similar cases, and their gratitude for kindness shown to them, is proverbial. In the City of Cork Loan-fund Society, the loss in six years, upon loans to the amount of £38,520, only amounted to £8 17*s*.

"We are satisfied the Government would not lose a shilling by this grant, so prolific and unfailing is the field, so ample are the means for repayment, and so keen would be the self-reliant struggle for independence. With a surplus treasury, an exchequer overflowing, and with large indirect taxation from Ireland swelling the resources of the State, we do not think any Chancellor of the Exchequer can remain imperturbable, or obdurate, in the face of the facts which can be marshalled against him.

"Extensive at first view though these requirements may seem, they involve no very serious expenditure, comparatively with the magnitude of the moral and national advantages that may be expected to result from them. The public expenditure upon the fisheries of Scotland cannot be otherwise regarded than as a due application of the finances of the State, when we see in one item alone a million sterling reproduced annually in national wealth; and towns, and harbours, and thriving communities springing up under its fostering influence. The Parliamentary grant of £14,000 per annum, for the control and management of the Scotch Fisheries, sinks almost into insignificance when contrasted with such results. Neither are *our* fisheries intended by nature, nor should they be allowed by governments or human laws to stagnate in neglect. We may witness in almost every provincial town in Ireland, imported cured fish retailed at high prices; but should we sail only a short distance from the adjacent shore, we shall see the very waters instinct, and moving with life, or perceive the ocean for miles intimating by known indications the masses which are moving below, or bristling in myriads at the surface!

"We have now detailed the requirements for calling into active existence the vast resources of our fisheries. We have stated them, we hope, impartially—at all events, independently. We cannot acquiesce in the justice or propriety of the 'non-interference' system, which has been so long and studiously recommended, and which has so signally failed; nor do we concur with those who promulgate the cold and iron dogmas of political economy: to preach self-reliance to the starving Celt is but to crush his hopes, and tell him to despair. Those dogmas may be palatable or may be applicable to happier climes, but they toll with fatal knell upon the exhausted resources of our fishermen. Our coast population possesses ample energy and self-reliance, if only properly set in motion and directed; and if these iron rules were relaxed, habits of industry and enterprise would be engendered in this country, not displeasing (we should hope) even to that school of political philosophy, which now uplifts itself predominantly amidst the rich porticoes, or academic groves of Manchester.

"A feeling prevails, well or ill-founded, that commercial jealousies retard the development of our fisheries; we cannot take upon us to offer any opinion upon this head. We have, however, the fact before us, that there is a large development of the British fisheries, whilst our fisheries are hermetically sealed up. Perhaps some apologist may say, that the continued agitations which distract the country prevent alike the introduction of capital, or the due care and culture of our resources by the Government; but let us hope that a new era is now at length opening upon us, and that the Celt has learned, in famine and misfortune, an enduring lesson—'Sweet are the uses of adversity'—assuredly in that school an improving lesson has been taught him, and an opportunity for social ameliorations now presents itself in this country, such as was never before presented at any period of our eventful history.'

"In urging our cause, and stating the case of the fisheries, may we make this concluding observation—that to attract population to the coasts should be a leading policy with every maritime nation. The time may arise (though distant be the day), when a brave and weather-beaten race of sea-coast population in this country will be a better exhibition to display before admiring and improving nations than a deserted coast; the thews and sinews of the land should be sustained; and while we compete betimes with clipper yachts, or in mercantile marine, let our future navies not be deemed unworthy of a thought: reinforced from our shores with a sturdy and well-cultured class of fishermen, we fear not, the navies of England will long maintain their proud pre-eminence—and in this western isle, the Queen of the waves possess a jewel, in the gratitude and loyalty of our sea-coast population, brighter than oriental pearl, or costly Koh-i-noor.

"The Government, perhaps, is not partial to a Fishery Bill, surrounded as it is with difficulties, and divided and conflicting interests; but when the voice of the country has been unequivocally, we might almost say indignantly declared, it is not too much to hope that Government will support a remedial measure so urgently required. The Irish fisheries form a component part of the resources of the empire, and are entitled to equal encouragement and equal support. Speculative advantages are not here sought; we only demand that culture and care of a great national property, which a landed proprietor would bestow upon his private estate. Without Government aid those fisheries must continue to be a sealed book. Lord Clarendon's attention has been frequently called to this important subject, by memorials and deputations from public meetings, but he has not expressed his views, nor indicated his intentions: still the prestige is favourable, and every anticipation of his approval and support may reasonably be formed: history will survey the events of his time, and may acknowledge brighter services of his, but none more useful than his unceasing efforts to improve our social position. The sacred duty has ever been present to Lord Clarendon's mind and councils, to develop our internal resources, instruct our industry, and foster and encourage every effort or enterprise calculated to advance our national prosperity: we are therefore sanguine in our hope for the fisheries: the ensuing session, however, will decide: if the Government will not support the Bill, the clauses having reference to the sea-coast fisheries must be expunged; if so, those fisheries will again languish and collapse, and a long and dreary inanition will ensue."

Recommendations of Commissions, Select Committees of the House of Commons, &c., in favour of Loans.

The policy of loans on security for the promotion of the sea fisheries has been affirmed by authority deserving of the utmost attention. The Commissioners appointed in 1819 remonstrated, in 1830, against the cessation of loans then in operation.

The Commissioners appointed in 1835, to report on the fisheries, also recommended loans to fishermen for the repair and outfit of boats, and the erection of curing houses and fishermen's dwellings.

In 1849 a Select Committee of the House of Commons, in reference to the Irish fisheries, reported :—

"That the want of proper funds and effective machinery has constituted an impediment sufficient of itself to defeat the intentions of the Legislature by disabling the Executive from giving them their due and practical effect."

The Select Committee of 1867 reported as follows, as to whether the State could aid judiciously in developing the fisheries :—

"The committee considered that the depressed state of the fisheries was mainly owing to the inability of a large portion of the coast population to procure the boats and gear requisite to follow the pursuit in a manner calculated to insure success. The advances made by 'The Society for improving the Condition of the Poor of Ireland' to fishermen to procure boats and gear had done much good, and had been all repaid; assistance of a similar character by a private individual in the west of Ireland appeared also to have proved most beneficial, and to have caused no loss to the lender.

"The Inspecting Commissioner of Fisheries (remark the committee) bore testimony to the benefits which resulted under the former system of loans, and warmly recommended their renewal. The Commission of Inquiry of 1836 (of which he was a member) also strongly urged the continuance of the system. The late Inspector of Fisheries, now the present Secretary to English and Irish Inland Fishery Commissions, an officer of great intelligence and experience, also advocated the granting of loans as the best means of resuscitating the fisheries. Other reliable witnesses deposed to the same effect; and all bore testimony to the peaceable, industrious, and honest disposition of the coast fishermen. In strongly recommending this subject to the serious consideration of the Government, your Committee do not feel that they are advancing any new principle; they have the precedent of the former system of bounties before them, and the evidence of the great advantages it conferred, they have the example of the liberal policy pursued by the Government for many years in encouraging the Scotch fisheries by loans and grants, to which the Secretary of the Scotch Fishery Board, in his evidence, attributed in a great measure the present flourishing condition of the Scotch fisheries. The question of security is one on which it will most naturally have to depend; and difficult as it may appear at first to determine in such cases what kind of available security would be deemed sufficient, they have little doubt that through the means of local committees and the collateral securities of the wealthier inhabitants of the districts, who, from their knowledge of the character and circumstances of the applicants, may be willing to answer for them, a satisfactory solution can be arrived at. In conclusion, upon this subject your Committee would merely remark that it is only to those who can give *bona fide* security they would recommend loans to be advanced.

"The Committee therefore, have no hesitation in strongly recommending that loans should be given on satisfactory security to fishermen, to be applied for the purchase or repair of boats and gear, as one of the best means of improving the fisheries, and also recommended loans, on satisfactory security, for the erection of curing houses and other buildings for fishery purposes, and for the construction and improvement of harbours in such instances as the Board might not consider itself justified in granting a subsidy from the public funds."

Capture, Importation, and Consumption of Fish.

From the information we obtained, both by evidence and personal observation during our late progress around the coast we fully concur in all the foregoing recommendations as to the desirability of loans on approved security. The entire capture *by Irish fishermen* does not exceed £400,000 worth a year. We believe that fully ten times that amount could be readily taken if the fishermen had sufficient appliances. For this quantity there would be ample demand at remunerative prices. A great quantity of cured fish is, as has been already shown, imported for consumption in Ireland. Five millions sterling is paid for fish annually in London; as much more at least is sold in the provinces.

Importance of Curing Houses.

We believe that loans to encourage the erection of curing houses would also prove most advantageous.

Besides providing a stock of preserved fish for the consumer at probably lower prices than that imported, the fisherman would have a greater certainty of disposing of all his capture than he has at present. In remote places after supplying the requirements of the immediate neighbourhood, great difficulty is often experienced by the fishermen in getting rid of what remains. Curing houses would go far to remedy this. We found many persons who could give ample security willing to enter on such undertakings if afforded aid by loan.

Good Results likely to follow from Loans.

It may be asked very reasonably if fishermen could obtain good security for loans from Government, why they cannot obtain direct loans from the parties willing to enter into security for them. To this it may be easily replied that men having their capital employed in their business or in the cultivation of their land might not find it convenient to lend money, while at the same time having perfect confidence in the honesty and capability of any particular fisherman, they would not hesitate to lend him their name and become bound for the repayment of the money.

It may also be added that the period over which the repayment should be spread—five years at least—although of no consequence to Government, might prove highly inconvenient to a private individual.

We are strongly of opinion that it would not be advisable to make free grants, as they would be likely to be productive of more injury than good. Nor should advances be made unless on unexceptionable security, as besides having a satisfactory guarantee for repayment, there would be the additional advantage—that the sureties would be likely to see that the fisherman applied the money to the purpose intended.

No better proof can be afforded of the benefits likely to result from loans judiciously administered, than the operations of the "Society for bettering the condition of the Poor of Ireland." The society has £30,000, the residue of charitable funds raised in England and Ireland. Of this £15,000, principal and interest, can be employed, but only the interest of the remainder is available for the objects of the society. These are—

"First—in affording aid in the construction and repairing of fishing boats; in providing hemp, flax, or twine, for the making and repairing of cordage or nets, procuring hooks, lines, and tackle; and to afford facilities and encouragement for the curing of fish for home consumption. As to the second—in affording aid to make or repair wheels, reels, looms, &c., and also in procuring hemp, flax, and wool to be distributed where requisite."

William Andrews, esq., one of the trustees and honorary secretary to the society, stated in his evidence before the Select Committee in 1867—

"The chief objects, however, were to improve the coast fisheries, by enabling the fishermen to obtain better class boats, gear, tackling, &c., and by disseminating such information as would tend to improve their condition, and to advance their knowledge as seamen and fishermen Taking the periods that the fisheries have been successfully encouraged the returns of the trustees show that during the last twelve years sums to the extent of £23,604 have been advanced in loans. At Howth most amazing results have been consequent through the application of the society's funds. The Howth boats, in 1862, only numbered four or five, manned by natives of the place, the boats being ill found and ill adapted to cope with the superior equipment and skill of the Scotch and Cornish boats. In the year above mentioned, the society influenced some spirited individuals to embark largely in fishing, and by example and employment of the fishermen, have improved the means and condition of the latter, and secured to them some of the advantages that had for so many years been reaped by strangers. . . . . Now there is a fleet of 50 sail of vessels of a much superior class, owing in a great degree to the loans from the society. . . . . At Skerries, a few years ago, they were all coasters, carriers from one place to another; but now there are about 116 vessels, 42 being first class, which well prove the advantages which have resulted by the granting of loans to the fishermen. Many other parts of the coasts—eastern, southern, and western—have been assisted, and have derived benefit to a greater or lesser extent."

He also gave some interesting details as to the great amount of good conferred on the fishermen of Dingle, and the stimulus given to the fisheries there by loans from the society. The amount

out at present he stated was £11,000, in sums from £10 upwards. With regard to repayment, he said—

"No losses whatever have occurred to those persons who have gone security: that is to say, within the last ten years. I do not know previously to that what may have occurred. Of course we should seek to recover from the securities, if the fishermen themselves, or those who had the loans, did not pay up; but we have never had a necessity for getting the instalments of the money from the securities—it has always been paid up by those who obtained the loans."

Another important witness before the same Committee was Mr. Robert Savage, a retired officer of Coast Guard. He stated that—

"He had been for twenty years in the Coast Guard service. On leaving it, had entered on fishing pursuits. About twelve years before he had settled near Belmullet, in the county of Mayo. In the district within which he carried on his operations, there were, when he began, not more than 50 boats and about 200 men engaged in fishing. The craft in use was the curragh. It is made of calico, with tar-barrel hoops; the hoop forms the body of the curragh, and very thin boards are cut 15 feet long, and calico is put over it with tar. They carry four men each; two tons burthen, and are good sea boats, particularly suited for that coast."

From the assistance he gave the people to buy boats and gear, and the curing stations he established for purchase, the following were the results:—

"2917. When your operations were at the highest, were not about 80 boats employed?—Yes, fully 80 or 100 boats.

"2918. And about 900 men?—About 900 or 1,000 men, in fishing, curing, salting, splitting, and drying.

"2919. That increase, I believe, was entirely owing to your operations?—Chiefly."

Of the honesty of the people and the benefit that would be effected by loans, Mr. Savage's testimony was most important:—

"2946. Do you think that if loans were granted to them, they would be likely to be repaid?—I am certain that they would.

"2947. Did you ever advance loans to those people yourself?—I got £100 from a society in Dublin for the fishermen, and got time to repay it.

"2948. Have you ever advanced anything out of your own pocket?—Yes.

"2949. Have you always been repaid?—Yes, some of the poor men went to America, owing the money, *and afterwards remitted the money from America, so that I never lost anything.*

"2950. Do you think that if loans were granted more extensively upon that part of the coast, it would lead to increased employment, and to a considerably increased capture of fish?—I am quite certain that all that the fishermen require now, is means to purchase gear to make themselves independent."

The late Inspecting Commissioner of Fisheries, Mr. James Redmond Barry, an officer of fifty years experience, suggested to the Committee—

"That, in addition to the enlargement of the Piers and Harbours Fund under the management of the Board of Works, there should be placed at

the disposal of the Fishery Board a sum of money as a Fishery Loan Fund, to be managed under their direction by the staff herein proposed."

Mr. T. F. Brady (a member of this Commission), formerly Inspector of Fisheries under the Board of Works, and now one of the Inspectors of Irish Fisheries, stated—

"With reference to the loans proposed by the Bill, I am fully persuaded they would be of more benefit to the country than can be conceived, and I believe would not be attended with any loss to the State, if judiciously administered. I think the benefits loans derived from the former system more than counterbalanced the loss to the State, whatever it was, which the extracts from the reports of the Commissioners who administered that fund will abundantly prove."

Sir James Dombrain, late Inspector-General of Coast Guard in Ireland, whose duties brought him frequently around the coast, and who by personal observation, and from the reports of the numerous officers under him, was particularly well qualified to pronounce on everything respecting the fisheries, stated—

"I most entirely approve of loans. Former loans had a very beneficial effect.

"876. Do you think that the sum which is represented to have been lost at that time was very well spent in encouraging that object?—Certainly.

"You believed that the coast population might be relied on to repay those loans?

"861. I may mention that I am at this moment concerned in a company which has been newly established in Ireland, called 'The Marine Salts Company of Ireland,' and that company, before they receive one pound's worth of kelp in return, advance, perhaps, many thousands of pounds to the poor people through the winter. There has not been an instance of those people having failed to fulfil their engagements. We have no legal lien upon them beyond the paper which they sign, which I now produce, and many advances are made to them all through the winter, being probably in November. I think that at this moment the company have advanced upwards of £3,000, and they have not got one shilling's worth of material from the people as yet; but we have no doubt whatever that they will fulfil their engagements as punctually and as honourably as they have done before.

"862. They have done so hitherto?—For many years before there has never been an instance of a single person failing in his engagement.

"863. Then you have to depend upon their personal honour in the matter?—Entirely so."

The Chairman of the Board of Works, Colonel M'Kerlie, gave a modified approval. He considered that if loans were properly secured it would afford a very great assistance to those who follow fishing as a regular means of livelihood.

In allusion to the recommendation of "Lord Morpeth's Commission," he was asked—

"420. Would you recommend a plan of that kind?—If sufficient security could be given, I do not think that there could be any objection whatever to making loans, but on the contrary, I think that there would be a great advantage in it."

The Secretary to the Board of Works, Mr. Hornsby, was asked—

"89. Do you believe that there are a great many of the maritime population of Ireland who would resume fishing if they could be provided with the means?—I believe so."

In allusion to the loans made by the Society for bettering the Condition of the Poor, he was asked—

"97. Do you not think that if such a measure was carried out, it would be productive in developing the fisheries of Ireland?—Decidedly it would."

Other experienced witnesses expressed themselves strongly in favour of loans.

Good accomplished by the Society of Friends.

No better instance, perhaps, can be given of the good results which have followed from assisting the fishermen to pursue their calling than that of the fishing community at Ring, inside of Helvick Head, in the county Waterford.

On one side of Dungarvan Bay, between the Slievegrine Mountains and the sea, is situated the district of Ring. The population in 1848, was between two and three thousand persons, chiefly supported by fishing. Most of them cultivated patches of potato ground. These crops were nearly lost; the demand for fish, owing to the reasons already stated (page 12), declined. The people of this district, driven to the direst distress, pawned or sold as much of their boats and gear as they could, and were at last driven to burn masts, oars, and the lining of their boats for fuel. Numbers besieged the workhouse, and several, who could not obtain admission there or employment on the public works, sunk into premature graves.

The Protestant pastor of the parish, the Rev. Mr. Alcock, deeply commiserating the distress of these poor people, although not of his flock, made an earnest appeal to the Society of Friends' Relief Committee, of which Mr. Jonathan Pim, the present Member for Dublin, was the laborious and useful Honorary Secretary. With the utmost promptitude it was responded to.

The immediate wants of the suffering people were first relieved. They were *then* spoken to of self-reliance and exertion; and, better still, rendered capable of both. Sums were given, from five shillings to five pounds, to put boats and gear in order, and to release those in pawn. The result was almost incredible. But a short time before, out of a fleet of 100 boats on the whole line of coast, half a dozen could not be considered sea-worthy. The crews wandered in forced idleness along the cliffs, privation and hopelessness depicted in their countenances. Fever and dysentery had walked quickly in the footsteps of famine; there was hardly a cabin where some victim was not stricken. *Soon, however, numbers of boats and hundreds of men were fishing. Their efforts gave bread to fully a thousand persons.*

They were indefatigable in their exertions to fulfil their engagements. To quote Mr. Alcock's "Facts from the Fisheries," no weather prevented them from putting to sea in search of fish, so great was their anxiety and ambition to be distinguished for industry, hardihood, and perseverance. "Often," he says, "have I stood watching them, after a night of excessive labour and hardship, pushing up their boats against a steep bank, beyond the reach of the sea, their backs *streaming with blood* from the exertions they were forced to make."

Besides the sum expended to meet pressing wants, about £300 was advanced to put boats and gear in order; *nearly every shilling was paid back*, less 25 per cent. allowed for punctual payment. This timely aid did great permanent good to the fishermen of Ring, as now they are amongst the most industrious and thriving of their class in Ireland. This is in a great measure owing to each having a small patch of land, which affords remunerative occupation when unable to go to sea, and tends also to keep them from the public-house. Further up the bay, the Dungarvan fishermen, who have no land, are generally in a distressed condition.

Miss Burdett Coutts and the Islanders of Cape Clear.

Instances of the benefits conferred on the fishermen by discriminating aid to enable them to prosecute their avocation, would be incomplete without alluding to the generous and successful efforts of Miss Burdett Coutts on behalf of the inhabitants of Cape Clear Island, and other islands near Baltimore, during a period of great distress some years ago. Many of the fishermen were amongst the recipients of her well-timed bounty, and were thus enabled to follow their calling; but in this instance the funds disbursed were not required to be repaid.

Loans consistent with the principles of Political Economy.

The argument which has sometimes been urged that it would not be consistent with the principles of political economy to assist the Irish fishermen by loans, might be met by the fact that two of the highest authorities on political economy, Mr. Stuart Mill, and Professor Fawcett, were amongst the most earnest supporters in the House of Commons of the bill introduced in 1867, in which loans were embodied.

Mr. Stuart Mill, in supporting the second reading of the bill, in reply to some objection urged against loans, said:—

"The main objection of his hon. friend, who had just sat down, to the granting of loans to the Irish fishermen was that if this were done for Ireland it should be done for Scotland and England. His answer was that Ireland was a more backward country than either Scotland or England. Government might very properly undertake to do things for a country which was industrially backward, which no one could expect

from them in the case of a country which was in a more advanced and prosperous condition. This consideration was of all the more weight when it was remembered that the industrial backwardness of Ireland was in a great measure attributable to the past legislation of this country. For a long period English legislators, without distinction of party, employed themselves in crushing this and most other branches of Irish enterprise. It was, therefore, incumbent on us, now that we were wiser and able to look upon our past conduct with shame, to legislate in an opposite direction, and even to risk, if necessary, the loss of small sums of money to advance that industry which we had formerly endeavoured to retard."

The late Earl of Derby in a report drawn up by him some years ago as chairman of a committee on Irish railways, in alluding to Government aid in forwarding industrial objects in Ireland, made the following remarks, which appears particularly applicable to the fisheries:—

"It is a waste of public available resources to suffer so large a portion of the empire to lie fallow, or leave it to struggle, by slow advances and with defective means, towards its improvement, when the judicious aid of the State might quickly make it a source of common strength and advantage. It was shown that if the Irish peasantry were placed, in point of comfort, on a par with Great Britain, the Excise duties would show an increase of £6,000,000 per annum. 'This consideration alone,' says the report, 'ought to silence any objection, on the ground of expense, against affording public aid, such as may be required, for these works, as it gives an enormous profit on the greatest contemplated outlay.'"

It seems a matter much to be deplored that the efforts made in Parliament for a few years past, in favour of some action on the part of the State to arrest the downward course of the fisheries, should have proved unsuccessful. Everywhere around the coast we had abundant evidence that vast quantities of fish beyond that now taken, might be captured if the people had only suitable boats and gear.

Efforts of the Fishermen to pursue their calling.

Considering the enormous difficulties they have had to contend with, consequent on the famine and other years of scarcity which occurred since, the fishing population appear to have made astonishing efforts to pursue their calling.

Wretched as their boats and tackle usually are, it is a matter of surprise that they are so good, when all the adverse circumstances are borne in mind. As a rule many of the fishermen are only under-tenants for small patches of land, and it is much to be regretted that more solicitude is not shown for them by the landed proprietors generally.

As shown by the return at page 13, the numbers of craft and crews are nearly every year diminishing.

Decline likely to Continue.

There is much reason to apprehend that, unless it is arrested by the means proposed, this decline will go on; every day's delay increasing the difficulty of resuscitation. Many hitherto engaged in the fisheries—unable to continue at the pursuit—will, as they are doing at present, go to other employments or emigrate, so that, should the Government at some future period desire to remedy the mistake committed in not sooner adopting measures to preserve the fishing population, it will be found extremely difficult, if not impossible, to raise or bring together again these hardy toilers of the sea.

The little tracts of land now occupied by the fishermen will, according as they abandon the pursuit of fishing, become absorbed in the larger farms adjoining, and it would be hopeless to attempt to create a new race of fishermen, requiring, as it does, a training almost from childhood to fit a person for fishery pursuits.

Unless prompt measures are adopted the rich mine of wealth which the fisheries offer will not be made available to a tenth of the extent it might. An incalculable amount of good food will thus be lost to the consumer. A great source of national wealth will become almost unproductive, and the Royal and mercantile marine must seriously suffer ultimately by the decadence of so excellent a nursery for seamen.

Nor should the fact be lost sight of that there is here an excellent opportunity of attaching to the State so important a portion of the community as the coast population. How useful they might be made in the event of war, was proved during the hostilities with Russia; when, in consequence of the withdrawal of the greater portion of the Coast Guard to serve on board ship, the protection of the revenue and the care of the coast had to be intrusted to fishermen enrolled for the purpose. The men discharged their trust with the utmost fidelity—the rapidity with which they learnt their duties being astonishing; yet so peaceable is the disposition of the Irish fishermen, that they appear rarely to take a part in any disturbance.

Policy of arresting the Decline.

To suffer so useful a class to diminish year by year, without adopting the means to preserve them suggested by Commissions, Select Committees, and the most experienced officers of the Government, besides other competent and reliable authorities, seems indeed to be a deplorable mistake. If to sustain the fisheries it was requisite to grant constant subsidies, then most assuredly there would be valid grounds for refusal. But if this industry can be placed in so sound a position as to be able, after a short time, to progress advantageously without further aid, then we submit that it would be in accordance with the precepts of political economy to lend the necessary temporary assistance to render it self-supporting.

Sound policy and duty should alike prompt the State which undertakes to govern any country to render as available as possible for its people whatever resources it possesses.

Regarded solely as a matter of profit or loss to the Exchequer, the small sum that might be lost if the experiment failed, ought, we submit, to be no reason for withholding it, whilst if it succeeded, even the revenue would largely gain by the increased consumption of exciseable articles consequent on the improved condition of those connected with the fisheries.

AID GIVEN BY THE FRENCH GOVERNMENT TO THE FISHERIES.

During our inquiries in France we saw abundant proof of the great good done by the aid which the Government affords. Although the sum annually spent on the home fisheries is not large (250,000 francs), considerable benefit is conferred.

So much importance does the Emperor attach to keeping even a single fisherman at his occupation that in some instances where boats have been wrecked, the owners, if too poor to purchase others, have been supplied with new boats and gear at the cost of the State.

It was also mentioned to us that on some parts of the coast where rude and imperfect modes of fishing were pursued, model boats with suitable equipments were given to meritorious fishermen.

Mr. Hornsby, the Secretary to the Board of Works, in an important report which he made a few years since relative to the French fisheries, shows the solicitude which the Emperor evinces for their advancement, and gives the following list of the objects to which the annual grant is devoted:—

"1st. The payment to fishermen to carry out, themselves, the erection of small ports or places of refuge for their boats.

"2nd. Model boats, with improved apparatus.

"3rd. Cleansing of the oyster beds.

"4th. Grants to fishermen who have sustained loss of fishing implements.

"5th. The purchase of cotton and hemp nets, given gratuitously to the most energetic and intelligent fishermen.

"6th. Grants for the preservation of oysters.

"7th. Experiments on subjects connected with fishery.

"8th. Rewards.

"9th. The establishment of preserves for oysters, to furnish a supply for the neighbouring beds."

Mr. James Redmond Barry, shortly before his retirement from the position he filled with the highest ability and usefulness for nearly half a century as Commissioner of Fisheries, paid the following just tribute to the class he was so long connected with, as well as to the Emperor of the French for his judicious policy:—

"The most gratifying feature which happily prevails through the length of the Irish coast is the general and uniform absence of crime,

even where modes of fishing have been introduced opposed to old prejudices; no class conflicts, no contention between trawlers and line fishers, though in many places it is believed that unrestrained trawling is injurious; the words 'peaceable and orderly' are with scarcely an exception applied to all the divisions. I have heard of no instance of a fisherman having been found implicated in the wild and wicked projects of Fenianism. Take them as a class, and I boldly say that no class is more deserving of sympathy for their distresses and aid to their industry. Few can appreciate the risks, the perils, the uncertainty of the pursuit. Philosophers may repudiate the idea of promoting any branch of industry by national aid. *The wise and far-seeing ruler of France does not model his fishery laws according to the strict doctrines of political economy, and we can see the results to his prosperous country, furnishing, as it does, an example to the world.* But, again, I pray an attentive examination of the suggestions from thirty-eight unpaid and intelligent, and in most cases experienced and educated gentlemen (the Inspecting Commanders of Coast Guards), in close and constant contact with our coast population. Almost as a body, they recommend as the indispensable means of regenerating our fisheries, which have been progressively sinking for the last twenty years, loans, capital, money, to purchase gear. One gentleman tells us that at the eventful period of the famine, numbers having lost their all, and having no resource, vanished from the country, and have never been replaced; their habitations have been pulled down; there are no means of congregating, no houses to occupy, no boats to replace those that have rotted. Those gentlemen, for whose disinterested opinions I entertain the highest respect, as I read their statements, make me blush for my own over-sensitiveness or fastidiousness in expressing through my recent examination before the Select Committee on Irish Fisheries doubts of the expediency of loans."

The following portion of a report, which he had prepared for 1865, but which was suppressed before publication, was produced before the Committee in 1867, at their desire.

Scotland more favoured than Ireland by Grants of Public Money for the Promotion of her Fisheries.

In alluding to the different treatment Ireland received with regard to her fisheries as compared with Scotland, Mr. Barry says:—

"The germ which was carefully sown was nipped in the bud, the very foundation was shaken, the bounties were abolished, the officers were disbanded, the loans were gathered in with the most merciless rigour by some of the officers who wished to exhibit extraordinary zeal, and the fatal Act 1st Wm. IV., c. 54, strangely enough entitled 'An Act to revive, continue, and amend several Acts relating to fisheries,' passed on the 16th July, 1830; while it gave a title in perpetuity to Scotland, for her valuable superintending establishment, and a continuous grant of £3,000 a year in aid of building piers, harbours, and repairing poor fishermen's boats—utterly extinguished all continuous encouragement to the fisheries of Ireland. It is really painful to me thus to refer to the past, but so much has been said of the indolence of our coast population, and there really is so very strong a contrast between our depressed state

and the prosperity of our Scotch neighbours, that it is only justice to state plain facts, which will prove that our extinction increased their improvement. The fatal policy of 1830 produced all the effects that may have been expected. The markets of Ireland were restored to Scotland, and the export of herrings from that country, which in 1830 was 181,654 barrels, in 1834 reached 272,093, of which 149,254 were to Ireland, with a proportionate increase in the export of cured dry fish; and in 1862 reached 494,910 barrels, of which 70,879 barrels were to Ireland; thenceforward for nearly thirty years we were wholly dependent on Scotland for our supplies of herrings. Here I may be permitted to observe that it really is not wonderful that several members of the Committee on the taxation of Ireland of last year should have hesitated to believe that the grant of £5,000 a year to Ireland, which was concurrent with the £3,000 to Scotland, should have been utterly extinguished, while the latter sum was perpetuated to Scotland by the same Act. . . . . .

"But not a particle of substantial encouragement, nor a penny towards aiding our coast population, was granted."

Again, alluding to the successful efforts made by Scotland to prevent the passing the Bill introduced by Government in 1838, embodying loans to the Irish fishermen, he says:—

"From Frazerburg, from Findhorn, from Leith, from Montrose, from Eymouth, from Stromness; and several deputations headed by the Duke of Sutherland and other influential proprietors were received, and finally, it got the *coup de grace* by being deferred for six months on the 23rd July, 1838."

It would appear that since 1800 Scotland has received for the promotion of her fisheries fully a million and a quarter sterling more than Ireland.

We entertain little doubt that if Ireland were only *lent*, on satisfactory security, for the promotion of her sea-coast fisheries a like sum to that which Scotland has received in excess of Ireland during the last ten years for the same purpose, or even if the Fishery Department were authorized to lend annually a sum equal to that which is voted for Scottish over Irish fisheries, that the latter would, in ten years, without loss to the State, be placed in so flourishing a position as to require little, if any, further aid. Should something of the kind not be done to arrest the present rapid decline of the fisheries it is inevitable that they will sink still lower. We cannot, however, believe that any Government will continue to neglect so obvious a duty as the attempt, at least, to render as available as possible the rich field for increased industry offered by the surrounding seas.

In several places where the fisheries are not properly developed for want of suitable boats we found men who would gladly join together and work such craft themselves, if they could only raise the necessary funds, for which they could give such security as would render the repayment perfectly certain.

A twenty-ton boat, fully found in fishing gear, &c., would cost £300, a sum which it is quite out of the power of most of the fishermen, such as are usually to be found on the coast, to raise, unless assisted by a loan; the repayment of this sum, to be useful, should be extended over some years.

Large Fishing Companies not successful.

Those who have not closely investigated the subject would naturally suppose that the Irish fisheries would offer many inducements for the formation of joint stock companies to develop them. Several undertakings of the kind have been started from time to time, but in the end, all, with one exception, which will be presently alluded to, failed.

There is no industry which requires closer attention to make it pay; unless those engaged in it have a positive interest in every fish captured, and in the saving of expenditure, success cannot be looked for. This cannot be expected in anything like a large company where the officers and men are necessarily paid by salary. Small local companies, owned and managed by persons having a thorough knowledge of their business, and taking an active part in the working, are the only enterprises of the kind likely to succeed.

The South of Ireland Fishing Company.

The South of Ireland Company is the sole survivor of the many similar speculations which have been launched from time to time. It has a small proprietary, and was started with a capital of £10,000. Two of the chief promoters—Mr. Murphy, the M.P. for Cork, and Mr. Shaw, the Member for Bandon, were induced mainly to start the enterprise from a desire to promote employment, as well as to develop the fisheries on their part of the coast. Much of the success which has attended the undertaking is due to the good system adopted for its management, and partly to the extraordinary quantities of mackerel which have resorted to that part of the coast where the operations of the Company are carried on for some years past.* The directors have extended their useful operations to Howth, having purchased the boats and nets of a firm which was unsuccessful there.

To fishing perhaps more than any other pursuit the wisdom of the adage holds good, of "making hay while the sun shines," as an opportunity lost may not soon return. The South of Ireland Fishing Company therefore merits the greatest credit for the patriotic spirit which influenced its promoters to embark capital, and devote their valuable time in forwarding so beneficial an undertaking, while great energy and ability has been displayed by the Secretary, George Purcell, esq., in its management.

* Owners of French vessels, in addition to their own take, bought largely, having provided themselves with materials for curing on board. A large portion fell to the share of English and Scotch boats which were attracted in considerable numbers in consequence of the extraordinary glut of fish.

The Mackerel Fishery.

The mackerel is even more wandering and unsettled in its habits than the herring; it is voracious, and is doubtless attracted by its instincts to the best feeding grounds.

That portion of the south coast off Kinsale appears for the last few years, for causes which our limited time prevented our sufficiently investigating, to possess extraordinary attraction for the mackerel, judging by the enormous capture. Even this might have been even much larger had there been a sufficiency of boats.*

One good result to be gained from aiding the fishing population to follow their avocation properly, would be that many of them from other parts of the coast would resort occasionally to the east coast and Kinsale, to partake, so long as it lasts, of the rich abundance offered there to the enterprise of the fisherman. When the chance of large shoals of fish seeking

"Fresh fields and pastures new"

is taken into consideration, it is a great pity, while they favour any portion of the coast, not to use every effort to benefit by so great a boon. In 1836 the quantity of mackerel on the south coast must have been as small as that of the herrings on the east, as the Commissioners appear to make no mention of them. One hundred years ago vast quantities of pilchards were taken off the coast of Cork, now they are seldom seen there.

The herring on the east and the mackerel fishing on the south coast will realize a large sum this year—double, probably, that of all the fish captured on the other two-thirds of the coast. But the chief gainers by the herring and mackerel fisheries are the English, Manx, and Scotch fishermen.

Roughly estimated the greatest number of craft fishing off Kinsale this season at one time was—English, Manx, and Scotch, 225; Irish, 55.

Capture of Herrings.

For some years past the quantity of herrings taken off the east coast has been very considerable.

From Ardglass to Wexford probably upwards of £150,000 worth was captured last year.

The English, Manx, and Scotch boats far outnumbered the Irish on the east coast.

According to the information furnished by Mr. Hornsby, Secretary to the Fishery Department, the value of the herrings captured at Howth last year amounted to £59,424. The greatest number of English vessels fishing off that part of the coast at one time was 126. Manx ditto, 140; Scotch ditto, 43; Irish ditto, 108.

* Nothing could exceed the difficulty in obtaining reliable fishery statistics, particularly as regarded capture, although two or three returns were furnished with regard to the quantity of mackerel taken off Kinsale, yet they differ so much that it is deemed best not to venture on giving figures.

Ardglass.

The highest number of English, Scotch, and Irish vessels fishing was 306; the value of herrings captured, £30,954.

Off Arklow the greatest number of vessels fishing at any time was about 350. Of these about 50 were English, Manx, and Scotch; 200 belonged to Arklow, mostly owned by men engaged in the oyster fisheries, the profits from which assist them considerably to procure good craft. The value of the herrings captured was nearly £50,000.

Skerries.

The number of Irish boats employed in the herring fishery last year was 29; value of herrings captured by them, £4,000. Several English and Scotch boats were also fishing, number not known.

Change of Places of Resort by the Herring.

Except on the portion of the east coast which we have indicated, herrings of late years have not, in Ireland, appeared regularly in shoals of any magnitude; occasionally, especially on the west, large quantities come into some of the bays. This occurred for two or three successive seasons some years ago off the Galway coast. A company was formed, and boats and nets purchased, but when all the arrangements for capture were completed, the herrings so nearly disappeared that the company after a couple of years were obliged to discontinue their operations. As stated at page 14, the Fishery Commissioners in 1836 make no particular mention of that part of the east coast where herrings are now so abundant, which shows that it could not then have been a favourite resort for them.*

Desirability of Combining the Cultivation of Land with Fishing pursuits.

Although on no other part except on the east and a portion of the south coast are there the same continuous large shoals for any length of time, yet occasionally a large influx of mackerel or herrings will appear in some of the bays on other parts of the coast. For want of adequate means of capture, comparatively little advantage can be taken of these opportunities. They are however so uncertain that except in a very few instances, it would not pay companies or private individuals to keep any large number of craft of good size on the northern, western,

* As a further proof of how the herring changes its haunts, it may be mentioned that at Rutland in Donegal, a company, established about eighty years, chiefly by aid advanced by the Irish Parliament, captured in one year £135,000 worth of herrings, the capital invested not exceeding £70,000. Within a few years these fish nearly abandoned that part of the coast.

Anderson states, in his Annals of Commerce, that in 1780 nearly 200,000 barrels of herrings (197,610 mease) were bought at Lough Swilly for England, in addition to foreign exports, and what was sent into the adjacent country.

There, too, after a few years the herring nearly disappeared.

At present there is employment at certain times for a few boats, but the quantity taken is insignificant.

and southern coasts. In reference to this we extract the following from Mr. Blake's work, already referred to, at page 7:—

"It was manifest from the evidence given by the most experienced witnesses before the late committee, that owing to the variable and tempestuous weather prevailing, the greater part of the year around the Irish coast, especially on the northern and western portions, fishing could, as a rule, be successfully carried on only by the coast population. At times, for weeks together, no fishing craft—no matter the size or strength of build—could attempt operations. Intervals of calm and tempest succeed each other so fast, that except in a few favoured spots, at particular seasons (such as on a portion of the east coast), it would never pay owners of large craft, or crews, to remain in harbour, watching for a chance to get a few hours' fishing. It is different, however, with the owner of a small boat, renting two or three acres of land for the grass of the cow, or the raising of sufficient potatoes for the use of his family. He seizes any good opportunity that offers for a day's, or even a few hours' fishing; and when not thus employed, he has occupation in looking after his little holding. Neither avocation injuriously interferes with the other; as, while at sea, if occasion should arise, his family could generally do whatever was necessary, the plot of ground giving sufficient occupation, when ashore to keep him from idleness or the public house. The fish he captures, besides the benefit to himself, confers a great advantage on his neighbourhood. These coast fishermen bear a high character for their sober, peaceful, and industrious habits. Those who have not been able to purchase or keep their boats in repair, will give the more fortunate so much for the season for permission to assist in the working of the boats and to share in the capture of the fish.

"Hundreds of instances might be given of the efforts of the poor people along the Irish coast to prosecute fishing, often in the face of the greatest difficulties, hardships, and danger. It was stated, on the authority of a Lieutenant of Coast Guards, before the Commission of Inquiry in 1836, the people of a portion of the coast of Donegal were often known to club their bed-clothes in order to employ them as a means of capture, remaining for some time without covering at night, each person so contributing getting a proportionate share of the proceeds. In other places, for want of boats, persons have been obliged to shoot their nets from the backs of horses. The perils and hardships of the canoe men are sometimes terrible. Instances have occurred where they have perished from cold and hunger when driven off the land.

. . . . . .

"Besides, the small boat—not, of course, the wretched, undersized craft too generally found, but good sea boats, not less than eight to twelve tons—can frequently fish successfully in situations which a larger one could not approach.

"In order to insure the fisheries being thoroughly availed of in every little creek along the coast, the eight-ton and twelve-ton boat is just as much required as those of fifty tons and upwards, which are requisite for trawling and deep sea fishing. Large boats owned by companies would not confer on the coast population anything like the benefits of small craft worked by themselves.

"If the fisheries were to be carried on by large boats only, say of thirty tons and upwards, a large amount of the fish frequenting the coast would be left uncaught. The owner of a small boat, looking from the cliff top for a good chance, is able to get his craft afloat and make his fishing between storms before a large boat in some neighbouring harbour could

muster her crew and reach the ground, only in time, perhaps, to be compelled to put back. Besides, efficient crews for the former would be very difficult to procure just now. The best way to raise them would be by the training which lads would first receive in the smaller craft."

Although the combination of fishing with farming as regards holders of land from ten acres upwards is undesirable, as in such instances the pursuits would be found to interfere with each other, the desirability of holding from two to eight acres has been affirmed by several persons who are competent to pronounce upon it.

The Inspecting Commissioner, in his report for 1866, says:—

"Who ever knew Irish fishermen, *exclusively fishermen*, provident? Political economists may say what they please, but I have seldom seen an Irishman, exclusively a fisherman, prosperous for two seasons, *without the bit of land* to occupy him in boisterous weather, and to give to his family a more certain prospect of food. Numerous illustrations of this theory may be found in Ireland; but nowhere more remarkable than in the once prosperous Dungarvan, which, as a fishing town, may be said to be extinct. But at all times the colony at Abbeyside and at Ring, with their small spots of land, have been industrious and provident, while the landless householders of Dungarvan were ever remarkable for improvidence and insubordination. But as a fishing town, '*stat nominis umbra*,' the few wretched old fishermen are more frequently the occupants of the workhouse than any other class. Their boats are in a miserable condition."

In his evidence before the Select Committee, he was equally strong on the point. He stated that:—

"There were various opinions upon that subject. Some persons thought that fishermen should be exclusively fishermen. I do not think it at all necessary. My experience, for the time that I have been connected with the fisheries, has been different. Landed proprietors upon the sea-coast thought it very possible that there might be fishermen upon their shores who might have small portions of land, and who might cultivate those small portions of land, and yet follow the fisheries as an adjunct. I think that possession of a little land is indispensable—in the first place, as an occupation during those periods when they cannot go fishing; and in the next place as giving a stake in society. A man who has a bit of land, and who cultivates it by himself, or by his family, is unquestionably a more independent man than a man who has no dependence of the kind. Round a great portion of the coast, for weeks together, men cannot follow fishing pursuits. It was very desirable that during those seasons they should have other occupations."

Other important witnesses, including the late Inspector-General of Coast Guard, corroborated Mr. Barry's views.

We saw sufficient to induce us to adopt the same opinion. The Dungarvan fishermen, those of the Claddagh at Galway, and other small fishing communities having no land, contrasted unfavourably with those differently circumstanced.

The Claddagh fishermen are now less than a fourth of the number they were some years ago. Many emigrated to Boston, near which they have established a fishing colony which they call New Claddagh; they have been most industrious and successful.

In their prosperity they exhibit much solicitude for their kindred in Galway, and have enabled several of their relatives to join them.*

The emigrants from the neighbouring Islands of Arran are, we understand, amongst the best fishermen near New York and Boston.

Restrictions on Fishing.

At the time we visited the coast we found trawling prohibited in every bay and estuary in which it could be successfully carried on.†

We should far exceed the limits to which we propose confining this report if we attempted to go fully into the vexed question regarding the deposit of ova and the various theories respecting its development. We shall, therefore, only say that we are of opinion that even if edible fish deposit ova in bays and estuaries they do so apparently in such situations as cannot be disturbed by the action of the trawl. The researches of eminent naturalists, and the experiments made by direction of the Scotch Fishery Commissioners in the Firth of Forth, go far to prove this.

The following extracts, from the work on the Irish fisheries, which we have had frequent occasion to quote, accurately describes the injurious results of the disabilities under which owners of trawlers suffer.

"The result of the prohibitions against trawling has been to strike a severe blow at fishing enterprise in Ireland on the part of those who could embark capital in the fitting out of good boats, and depriving the public of a large amount of food, which would be obtained if those restrictions did not exist.

"On either of two grounds only could prohibition under such circumstances be justifiable—First, the certainty that trawling in bays and estuaries had the effect of destroying ova and immature fish to an extent likely to prove seriously injurious to production; or, secondly, that without augmenting to a fair extent the supply to the public over that which would be afforded by those following other modes of fishing, that inshore trawling injuriously affected the latter.

"There are many who contend that the question should be regarded only in its commercial aspect, and that whatever mode of fishing gives the largest supply to the market ought to be upheld, even though it might militate against those using other means of capture.

"So far from concurring altogether in this view, the writer has no hesitation in saying that his sympathies are much more with the small than the large fishermen, as he believes it would be so much better for the interests of the country if most of the fishing could be carried on by the coast population, indeed he would much prefer, even at some

* Numbers of fishermen in Newfoundland are of Irish descent, and are unsurpassed for skill, endurance, and industry.

† The prohibitions extend to Dublin Bay. On the east coast from Howth to Cranfield Point, in the county Down (a long line of coast), Dundrum Bay, from Hellyhunter Rock to St. John's Point; Belfast Lough, Donegal Bay, Galway Bay, Brandon and portion of Dingle Bay, county Kerry, Bantry Bay. Glandore Harbour, Waterford Harbour (for large boats), Kenmare estuary, at certain periods. Restriction on Wexford coast is only imposed while boats are engaged in herring fishing, and it is not deemed objectionable.

sacrifice of supply, that the trade should remain chiefly in the hands of humble fishermen; therefore, for their sakes, if for no other, he would be strongly opposed to anything calculated to diminish production.

"Although entertaining those sentiments, he has no hesitation in expressing his belief that, whilst the removal of the prohibition on trawling in bays and estuaries would give an impetus to fishing enterprise and afford additional food and employment, that it would neither sensibly affect production or injure those following other modes of fishing. Provided, of course, that regulations were enforced (as recommended by the Select Committee) to compel fishermen to adopt precautions against coming in contact with each others gear.

"In England there is no restriction whatever on trawling, and in Scotland the few that were enforced (from a now admitted erroneous idea of injury to the herring fishery) are about being removed, a Bill for that purpose having been introduced last Session.

"In Ireland, more than any other part of the Kingdom, it is desirable that there should be no restrictions on this mode of fishing. So long as they exist, the fisheries cannot be fully developed, and meantime employment is checked and the public deprived of a large amount of good food they might otherwise obtain—the poor, for both reasons, being the greatest losers.

"Nowhere, perhaps, are there more terrific gales of long continuance than on the Irish coast, especially the western portion; there the full force of the Atlantic wave is felt, rendering it impossible often for weeks together for even the largest and stoutest fishing vessels to proceed to the open sea. Within the shelter of bays and estuaries at such times, they might often prosecute fishing advantageously, but hardly one can be entered where trawling could be carried on that prohibitions do not exist.

"Vast shoals of fish frequently come into those bays, either in pursuit of fry—to feed on the mollusca and other descriptions of food which may be found—or to seek shelter (as there are certain storms and states of wind which induce fish to enter bays, as well as others which send them far out to sea), many of them being of a description not captured by any mode save trawling. But the trawlers must look idly on as the fish pass them in myriads.

"Millions of good fish are thus annually lost to the fishermen and to the consumer. It often occurs that a trawler will be in pursuit of fish when, owing to wind or tide, approaching storm, or many other causes, it becomes an object of the utmost importance to continue the operation within a bay or estuary; the chances are, that the captain finds himself within one or other of the thirteen prohibited portions of the coast, and must cease operations or incur a heavy penalty, frequently enforced.

"The consequence has been, that many persons of enterprise and means have been deterred from embarking their capital in fishing, knowing that a good part of the time that their boats might be profitably engaged, they would be compelled to remain inactive in harbour, with the chance of the crews becoming disorganized, from the temptation to spend their idle time in public-houses. If the grounds on which this most injurious restriction is founded be thoroughly investigated, they will be found to be quite untenable. The first objection is, that as fish deposit their spawn in the shallow waters of bays and estuaries, that the action of the trawl would tend to disturb or destroy it.

"According to the best testimony, there is no certainty that any edible fish, except herrings, deposit their spawn in bays, &c.; and even if deposited there, it has been pretty well established that a trawl could not work in the only places the ova is at all likely to be—rough ground."

To set the question at rest, we consider it would be most desirable for the Fishery Department to institute a series of experiments to ascertain whether, or how far the ova of edible fish are likely to be injured by the action of the trawl.*

Asserted Scarcity of Fish.

As already stated, many representations were made to us on different parts of the coast of an asserted scarcity of fish as compared with former years. We believe the simple fact to be that when such abandonments take place, they occur in consequence of the exhaustion of food, and that the fish might be found at other feeding grounds where a more plentiful supply is to be obtained. Large shoals of fish are often accidentally discovered in places not previously suspected of being frequented by them. Means should therefore be adopted to ascertain whether fish are to be found in places off the coast not resorted to by fishermen—as the latter are usually too poor to afford the time and expense necessary for such investigations.

Branding.

The desire expressed by several persons engaged in the capture and cure of herrings that the branding system, same as practised in Scotland, should be introduced, ought we think to be complied with, more especially as there is a willingness to pay the same fee for it as is charged in that country.

Much difficulty is sometimes felt in disposing of the Irish cured herrings, for want of the brand, as a guarantee of their quality.

Harbours.

In many places we found great want of harbour accommodation for the shelter of fishing boats.

The existing condition which requires at least a fourth of the

* The following appears in the Report of Her Majesty's Consul-General for Norway, for 1869, on the sea fisheries of that country.

"The ichthyologist, Professor Sars, who has devoted great attention to the fisheries, and sojourned at Loffoden during the fishing season, with a view to the study of the habits and natural instincts of the cod and other fishes, has lately published some notes on the spawning of sea-fish. He declares that it is a mistake to imagine that sea-fish in general cast their roe at the bottom of the sea; that the contrary is the fact, that the operation of spawning takes place on the surface, and that the roe floats about during the period of development.

"He asserts that not only the cod, but also the mackerel spawn in the same manner, a short distance from the shore; and it is, he says, not unfrequent that you will find a variety of fish performing this operation at the time with the mackerel.

"Intermixed with the roe of the mackerel, he declares he has seen the roe of six other kinds of fish; among these the gurnet (*gurmandus*).

"In the spawn of the cod and mackerel, each roe (egg), will be found to contain a drop of oil, which lessens its specific weight so that it is sustained on the surface. This drop of oil is present during the whole period of development. Even after the fry has escaped, the drop of oil will be found in the maternal shell.

"The mackerel, he says, can be distinguished by a yellow spot on the back of the eye, not yet furnished with pigment.

"The theory of Professor Sars is not applicable to all fish, as it is well known that the herring seeks the shore and inner waters, and that the female fish deposits its roe safely amidst the sand and gravel, where it is not easily disturbed."

cost of any work, to be raised in the locality before the Government advances the remainder, is often very difficult to be complied with. In many places the people are too poor to raise any portion of the sum by subscription, and frequently there is not sufficient interest felt in the fisheries to induce the cess-payers to consent to contribute a portion of the outlay. We visited several harbours, ostensibly constructed for fishery purposes, but of very little use for that object. We saw many instances where, within a short distance of such harbours, much more useful ones for the fisheries could be constructed for less money than the sum contributed by Government. The explanation was, that for the former place private subscriptions or baronial presentments were more easily obtained, as the harbour would be likely to prove useful for pleasure boats or market boats.

On this subject Mr. Donnell, C.E., Inspector of Harbours under the former Fishery Board, justly observed :—

"I venture to observe that the clause contained in the section of the Act of 5 Geo. 4, c. 64, which requires local contributions in aid of every grant, works badly. It has the effect of fixing the construction of harbours on inferior instead of superior sites ; local contributions are only to be obtained where the individual subscribing will derive personal advantage ; he therefore in general proposes the site as the condition of his subscription ; and though a preferable site may not be very remote, if local contributions cannot be obtained for it, the Board cannot decide in its favour, but must either submit to grant for the inferior site, or give up the measure altogether. The principle of local contribution is good, but its universal and indispensable application practically renders the selection of the best sites impossible."

On the whole, we think it likely that, so far as the fisheries are concerned, it would be more economical for the State to contribute the whole of the amount necessary for fishermen's harbours, leaving the selection of the sites to competent authority, than to continue the present system of requiring a portion to be contributed ; it certainly would be more beneficial to the fisheries. However, if the present system must be continued, greater indulgence should be afforded in some cases for the payment of the local contribution by spreading it over a longer period. This would have the effect of inducing many localities, too poor to comply with the present requirements, to avail themselves of the advantages afforded by Government.

Advantage of Increased Railway Communication to the Fisheries.

Amongst the most serious of the disadvantages suffered by the fishermen in remote places is the difficulty and cost of conveying his fish to distant markets. No interest would be more served than that of the fisheries by the extension of railways and the reduction of rates.

The cost of sending small parcels of fish any distance—say 100 miles—is frequently half of what would be realized by them on

their arrival at market. This often precludes their transmission altogether. A struggling industry, like the sea fisheries, which it is so necessary to foster until it is placed on a better footing, particularly appeals to the generous consideration of the Railway Companies to deal in a more liberal spirit than they have hitherto generally evinced towards the coast fishermen.

The Oyster Fisheries.

Although we have fully dealt with the oyster fisheries in our Report on that subject, we desire here to express our opinion that the success of this branch of the fisheries would materially assist the development of the coast and deep sea fisheries, and it is, on that account, worthy of every legitimate aid the State can extend to render it successful. In places suitable for profitable cultivation the persons who would engage in this industry might gradually acquire the means for purchasing boats and gear for deep sea fishing. The oyster fisheries at Arklow and Wexford have been the means of enabling many to provide themselves with large well-found boats suitable for all descriptions of fishing. If Arklow possessed a good harbour, its industrious, enterprising fishermen, owing to the profits they derive from oysters would probably soon provide themselves with as good fishing craft as any to be found in the kingdom.

Character of the Fishermen.

We can confidently state that both from the inquiries we made on different parts of the coast, as well as from a perusal of the Reports of the Coast Guard officers from the thirty-eight divisions, and extending some years, it would be difficult to find any class in the community deserving a higher character for sobriety, honesty, peaceable conduct, and industry, than the Irish fishermen.

Conflicts even between those pursuing different modes of fishing are rare.

Recommendations.

As the result of our inquiries we beg most respectfully to submit for your Excellency's consideration the following recommendations:—

1. That the Department charged with the administration of the Irish fisheries should institute experiments with a view of ascertaining whether the ova of edible fish is liable to be injured by the action of the trawl.

2. That the Fishery Department should take measures to ascertain whether fish in any quantity are to be found in places off the coast not resorted to by fishermen.

3. That a Government vessel should occasionally attend the herring fishing to enforce observance of the regulations as to the time for commencing the shooting of the nets.

4. That the herring branding system, as in operation in Scotland, should be re-introduced.

5. That greater facilities should be afforded for the construction of fishery harbours by granting in certain cases a longer period for the payment of guaranteed local contributions.

6. That an adequate sum should be placed at the disposal of the Fishery Department for the collection of statistics.

7. That loans on satisfactory security be advanced for the erection of curing-houses and the repair and purchase of boats and gear.

In conclusion we desire most earnestly to impress on your Excellency that the last recommendation which we have offered is one of the most paramount importance for the preservation and prosperity of the Irish fisheries. Having so fully given the reasons why we consider the State should aid this declining industry in the preceding part of this Report, we deem it unnecessary to repeat them.

To a few facts, however, we desire to again draw your Excellency's attention.

The entire sum realized from the fisheries off the coast of Ireland in ordinary years does not exceed £450,000,* which is said to be about the quantity consumed in London in a month. We believe that they might be made to yield fully four times that amount. We need not point out the benefits that would result, not only to Ireland, but to the United Kingdom, by the diffusion of so much additional wealth, the promotion of increased employment, and providing the public with an augmented supply of wholesome food.

Unhappily, year by year the class on whom the development of this industry depends is diminishing, and for the reasons already stated the difficulty of replacing it will increase. It therefore becomes the more incumbent on those on whom the responsibility rests to make an earnest effort to stay further decline.

The Select Committee of 1867 reported that—

"Out of the thirty-eight fishery districts into which the coast was divided twenty-three were declining and six exhibited no signs of improvement; that on a portion of the east and south-east coast an improvement had taken place for the last few years, owing to the large influx of herrings and mackerel, and a great impetus had been given to fishing enterprise in consequence, at the principal points from which herring and mackerel fishing was carried on.

"Around the other parts of the coast, with very few exceptions, there was the same downward tendency which since the famine had marked

* A large portion of this sum is earned by the English, Manx, and Scotch fishermen engaged in the herring and mackerel fisheries. Since the preceding part of this Report was written, vast shoals of pilchards have appeared off the south coast, but for want of the proper appliances for capture and cure, comparatively few were taken.

this branch of industry; although it appeared certain that fish was as abundant as ever, the demand as great, and facilities of internal communication and means of reaching the English markets much increased."

In the last ten years alone there has been a decrease in fishing craft of 2,697, and in the crews of 10,776 persons. If not arrested in the way we have suggested it is inevitable that this decline will go rapidly on, and that every delay will enormously increase the difficulty of restoration.

The great change from tillage to pasturage now going on in Ireland renders it the more desirable that anything likely to afford other employment should be availed of.

Unfortunately, Ireland does not possess the same mineral resources as England and Scotland, or the same advantages of capital, commerce, and manufactures; therefore it is the more incumbent that those on whom the duty devolves should endeavour to render available to the people every industrial resource which Ireland possesses.

Rarely, perhaps, was there given to any Government such an opportunity of doing so much good at so little risk of loss.

With the example of what the French Government is doing for its fisheries, and remembering the aid which has been and still is rendered to the Scotch fisheries, it seems incredible that those of Ireland should be left to their fate.

That the poverty of the coast population, caused by dire visitations of Providence, has alone prevented them from benefiting to the full extent of the plenty contained in the surrounding seas, is proved by the eagerness with which they have taken advantage of every encouragement to engage in fishing pursuits which has been offered to them.

We feel bound to repeat that we believe nothing of value can be accomplished for the Sea Fisheries until effect be given to the strong recommendations of the two Commissions and of the Select Committees of 1849 and 1867, combined with the advice of some of the most experienced officers of Government, so as to aid in the manner suggested, the fishing population in pursuing their avocation with success.

Should the Legislature lend the assistance sought, and thus enable the willing labourer to provide himself with the implements of his craft, we anticipate that this declining pursuit will ere long be converted into a flourishing industry.

All of which we certify under our hands to your Excellency.

JOHN ALOYSIUS BLAKE.
FRANCIS FRANCIS.
GEORGE W. HART.
THOMAS FRANCIS BRADY.

13*th August*, 1870.

DUBLIN: Printed by ALEXANDER THOM, 87 & 88, Abbey-street,
For Her Majesty's Stationery Office.

Herring Fishery (Scotland)

[C. 166 A.] Report by the Commissioners for the Herring Fishery (Scotland) of their Proceedings in 1869, being the Fishing of 1869

The above, being a folio paper, will be found in Vol XVII.

REPORT OF THE COMMISSION

APPOINTED TO INQUIRE INTO

THE METHODS

OF

OYSTER CULTURE

IN

THE UNITED KINGDOM AND FRANCE,

WITH A VIEW TO THE INTRODUCTION OF IMPROVED METHODS OF CULTIVATION OF OYSTERS

INTO

IRELAND.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1870.

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WARRANT appointing JOHN A. BLAKE, Esq., M.P., FRANCIS FRANCIS, Esq., GEORGE W. HART, Esq., and THOMAS F. BRADY, Esq., to be COMMISSIONERS for INQUIRING into and REPORTING on the ARTIFICIAL CULTIVATION and PROPAGATION of OYSTERS.

BY THE LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

ABERCORN.

WHEREAS it has been represented to us that the artificial propagation of oysters, as an important article of food, is at present imperfectly understood in Ireland, and that it is desirable that inquiries should be made into the methods used in some parts of Great Britain and France, in which it has been more successfully carried on, and into the practicability of introducing improved methods of cultivation of oysters into Ireland.

We, JAMES DUKE of ABERCORN, Lord Lieutenant-General and General Governor of Ireland, do hereby nominate and appoint JOHN A. BLAKE, esq., M.P., FRANCIS FRANCIS, esq., GEORGE W. HART, esq., and THOMAS F. BRADY, esq., to be Commissioners, to make such inquiries as aforesaid, and to report fully for our information the result thereof.

Given at Her Majesty's Castle of Dublin this 2nd day of October, 1868.

By His Grace's Command,

THOMAS A. LARCOM.

OYSTER FISHERIES.

Instructions to the Commission.

Much public attention having been directed to the artificial cultivation and propagation of oysters, Her Majesty's Government are very desirous that some authentic information upon this subject should be supplied to the public, with a view of encouraging this industry in Ireland.

The cultivation of oysters in this country is not in a satisfactory state, and little progress appears to have been made in consequence of recent legislation.

Out of nearly ninety licenses granted by the Board of Works for oyster planting, which embrace an area of about 15,000 acres, scarcely half a dozen can be said to be successful. This is the more surprising as Ireland is admittedly well calculated for the successful prosecution of *ostreoculture*. The favourable temperature of the sea, the large inlets and bays on the western coast, containing banks where oysters are already found in great numbers—the habits and tastes of the coast population all show that this most valuable industry might be prosecuted with great success.

With the consent of the Lords Commissioners of the Treasury, His Excellency has determined to appoint an unpaid Commission, consisting of the following gentlemen—J. A. Blake, esq., M.P., Francis Francis, esq., George W. Hart, esq., T. F. Brady, esq.

The duties they are required to perform will be as follows:—They will visit the principal places in France, England, and Ireland where oyster cultivation is, or can be carried on; they will examine the best authorities upon the subject, and endeavour to ascertain the causes which have hitherto led to the many failures which have been experienced.

The places which should be visited in France would be the great Government Establishments at Arcachon, near Bordeaux, and the private breeding and fattening grounds at the Ile de Ré, Ile de Oleron, Marennes, and La Tremblade, all of which are

within a short distance of each other. Concarneau, near Brest, where several descriptions of fish culture are carried on under Government management, it might also be desirable to visit. They will also visit those places in England where attempts, successful or otherwise, have been made to increase the supply of oysters by artificial means, and subsequently inspect certain portions of the coast of Ireland, which, in the opinion of the Commissioners, would be suitable for carrying on oyster culture.

A fortnight would probably suffice for France, the same time for England, and three weeks for Ireland.

They will report fully to His Excellency on the various matters of interest which may occur to them, and they will recommend the measures that appear to them most suitable for increasing and rendering more certain the supply of oysters.

MAYO.

DUBLIN CASTLE.

REPORT.

TO HIS EXCELLENCY THE LORD LIEUTENANT OF IRELAND.

May it please your Excellency,

We, the Commissioners appointed to inquire into the practicability of introducing improved methods of the cultivation of oysters into Ireland, beg to report for your Excellency's information as follows:—

In compliance with our instructions, we proceeded in October, 1868, to investigate the various modes of culture employed with respect to oysters; the success or otherwise which has attended such undertakings; the condition of the natural banks in France and the United Kingdom; the cause of their decline in production (if any), so far as ascertainable, and the means adopted for their preservation.

For the purpose of carrying out these views, we visited the following places:—

In France:

Arcachon, Auray, Cancale, Chattellalion, Concarneau, Granville, La Tremblade, La Teste, L'Orient, Marennes, Oleron, Ré, Rochers D'Aire, Regneville, St. Brieux.

In the Channel Islands:

Jersey.

In England:

Beaumaris, Brading, Bristol, Colchester, Cowes, Emsworth, Fagborough, Faversham, Hayling, Harwich, Hamble, Herne Bay, Ipswich, Langston, Lymington, Milford, Nacton, Newtown, New Brompton, Paglesham, Tenby, The Solent, Whitstable.

In Ireland:

Arklow, Ballyvaughan, Ballinahinch, Ballinakill, Belfast Lough, Baltimore, Bantry Bay, Carlingford, Cork, Clew Bay, Cleggan, Clifden, Clonderlaw Bay, Derreen, Dungarvan, Fota Island, Galway, Kenmare, Kinsale, Killeries, Kinvarra, Kilrush, Sligo, Lough Swilly, Lough Foyle, Shannon, Sneem, Queenstown, Waterford, Wexford.

Natural History of the Oyster.

For the better elucidation of the subject with which we are charged, we deem it desirable in the first instance to give a brief account of the oyster itself.

Hanly gives the following varieties of the oyster in his catalogue of bivalves :—

Ostrea edulis.	Ostrea rufa.	Ostrea columbiensis.
hippopus.	magaritaca.	lacerans.
adriatica.	gibbosa.	bicolor.
cochlear.	elliptica.	multistriata.
cristata.	angulata.	callichora.
gallina.	echinata.	glaucina.
lingua.	stellata.	sinensis.
tulipa.	prismatica.	turbinata.
scabra.	lamellosa.	crista galli.
rostralis.	uncinata.	hyotes.
parasitica.	raricosta.	radiata.
denticulata.	senegalensis.	inegadon.
excavata.	orientalis.	pes. tigris.
mytiloides.	rosacea.	lincolnii.
sinuata.	chemoritzii.	pyxidata.
trapezina.		

Ostrea edulis is the oyster of commerce in this country.

In all climates, and in all its varied species, the oyster is supposed to be hermaphrodite, and its chief characteristics appear to be the same wherever it is found.

The precise manner in which the impregnation of these molluscs is effected is yet an unsolved enigma.

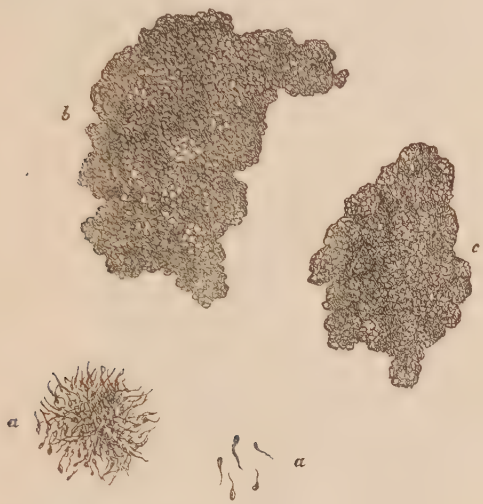
There are various theories extant upon the subject, which have all been, more or less, under public consideration and discussion. One of the latest is that put forward by Dr. Kellart, which is supported by Mr. G. W. Hart, one of the members of this commission, viz., that there is a mutual fecundation partaken of by all the individuals composing an oyster-bed—a general emission of spermatozoa taking place at a period somewhat prior to the formation of ova in the ovaries.

If this view be correct, it would serve to explain much of what has hitherto been the great *casus belli* between those who hold the opinion that the present scarcity of oysters is caused by failure of spat, and those who attribute the failure to over-dredging. Viewed in this light it would appear that the aggregation of oysters into beds is a provision of nature to effectuate this mutual impregnation, and that when an oyster bank has been so greatly dredged that the component individuals upon it are at great distances from each other, the reproductive powers of the bed may be almost entirely destroyed, although dredgermen may still obtain sufficient oysters to remunerate them for their labour in seasons when prices are high. Unless the tide or current in such cases brings the spermatozoa within reach of adjacent oysters, a bank so reduced ultimately (and quickly) dies out to the great astonishment of those fishermen who can testify (and that truthfully) that there has always been oysters upon it, and that it was not in their opinion exhaustively dredged. The breeding season may be said to commence with the disappearance of the letter R from the nomen-

clature of the months; in truth, however, the development of spermatozoa (see *a*) takes place generally in the month of April. In two or three weeks these disappear, and the ovaries become full of a creamy matter, causing the appearance commonly known as milchyness.

Under a powerful microscope this is resolved into oval clusters of globular atoms (*b*, *c*) floating in a transparent liquid, but without any apparent enclosing outline or membrane, a little later

Fig. 1.



G.W.H.

a. Spermatozoa. *b*. Milch, early stage. *c*. Milch, more advanced

Fig. 2.—Oyster Spat in various stages.

G.W.H.

d. White Spat, without shell. *e*. White Spat, more advanced
f. Black Spat, shell perfect. *g*. Spat just attached.

cilia appear at the broader ends of the ovoid groups (fig. *d*), and motion commences; still no shell is visible, and at this stage the ova pass gradually from the ovaries into the mantle of the oyster.

The gills, fin, or mantle consist of four inner and two outer lobes, of which the outer are furnished with cilia, and are permeated in every direction with nerves and secretory ducts, for the exclusion of any enemy or injurious matter, and the secretion of the shell.

The cilia are in incessant motion whilst the shell is open, causing a constant flow of water over the surfaces of the branchia; these possess no nerves, but are permeated by vessels in which the blood is aerated by the contact of the water. Between these lobes the ova are retained for some days, the mass gradually passing in tint from white through yellow, yellowish grey, and dark grey, nearly approaching black before extrusion.

When it has attained this stage, the embryos are almost perfect, and the mucous matter in which they have previously been embedded, will be found to have been absorbed.

From one to two millions of young are produced by each pregnant parent during the spatting season, and their extrusion is accomplished by a series of quick openings and shuttings of the parent shells, thereby causing a sudden outflow of water, which carries the young with it.

The emission continues until all are expelled, the process extending over a period which does not certainly exceed a week, and when emitted in the mature or black spat state, it is as perfect as when it attains its full growth.* Artificial fecundation, such as is practised with salmonidæ, is impossible, from the fact that fecundation takes place before the extrusion of the ova from the ovaries, and therefore we must conclude that with oysters the utmost that can be done by so-called artificial breeding is *not the procuring of artificial impregnation*, but only the shepherding of the impregnated ova during infancy.

The young when in a mature state attach themselves immediately to the first clean hard substance they meet with. It has been ascertained that the spat floating in the water for several days is that which from inability of the parent to contain it or from other causes, has been ejected, or escaped before maturity—such spat forms a large proportion of the whole, and during the time in which the spat is free and is becoming fitted for attachment, it is carried by tides and currents to great distances—is devoured by countless enemies, or is driven upon muddy or otherwise unsuitable ground, and so perishes. Under the most favourable circumstances the proportion that never attaches is very considerable. In a natural state the oyster remains attached, during its lifetime, to whatever object it first adheres to, but after an accidental removal it will again adhere to substances with a hard and tolerably clean surface.

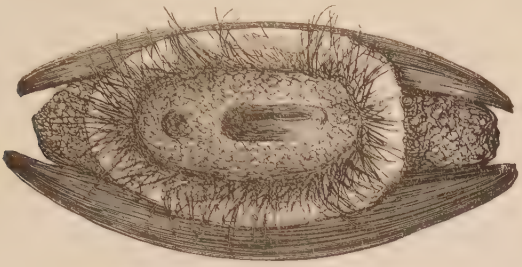
To save the bulk of the spat when free is the great object of oyster culture.

It may be here stated that all descriptions of molluscs are apparently free for a longer or shorter term; of this fact the cockle, mussel, winkle, and balanus tribes afford proof.

* By feeding the oysters when free with coloured matter such as carmine, in the water, the interior economy is made visible, and the whole will be found to agree exactly with that of the adult oyster.

Figures 3, 4, 5, exhibit oyster spat viewed in various positions.

Fig. 3.—Black Spat, as viewed from the surface of the water when floating.



G.W.H.

Fig. 4.—Black Spat greatly magnified.

G.W.H

Fig. 5.—White Spat greatly magnified.

G.W.H.

In the British waters and those of France spatting usually takes place when the parent oyster is from three to four years old, although it is not uncommon to find oysters milchy at a much earlier period.

It has not been clearly ascertained how often during life breeding takes place, but there is no reason to suppose that it does not frequently occur in the lifetime of the same oyster, although it is supposed that not more than 10 per cent. of the stock on any bed will usually spat during any one season.

As oysters, however, from various causes, have been known to spat very late in the year, it is impossible with accuracy to state the proportion of full-grown oysters that breed annually.

The young oyster when perfectly mature rises immediately to the surface upon its emission from the parent, after which it adheres to the first clean hard substances it meets with; this motion is effected by what has been termed a swimming pad (*see* Figures 6, 7, 8, 9), but which is in truth but the protruded

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

lobes of the mantle and not an organ specially formed for locomotion, seeing that by it the shell is secreted. It is by this organ also that the oyster attaches itself, and this too in the same way that it forms its shell. Swimming with open shells and extended mantle uppermost on meeting with a clean hard surface it remains in close contact with it and secretes over that part of the substance which it touches a coating of the same material of which its shell is formed—the first coating is followed by other layers—and so the once free oyster becomes fixed, and by a repetition of the process from time to time the necessary increase of

shell is made to meet the requirements of the fish; by the same means also young or adult oysters re-attach themselves to stones or other substances when removed from the places to which they first adhered.

That oyster spat invariably rises when first emitted is a fact to be appreciated in cultivation.

The nature of the bed or soil on which the oyster rests is a matter of the greatest importance, conferring as it does upon the oysters there bred or deposited special flavour or other qualities distinguishing them from all other oysters on adjacent grounds, and this influence prevails to so great extent that dredgermen can in a fog or dark night readily recognise their position by the shape, size, or colour of the oysters brought up by the dredge, and although the distance between such beds is often small they are enabled accurately to steer for the harbour from information of this peculiar kind.

The nature of the soil is important in another aspect. Many circumstances highly favourable to the growth and fattening of oysters are the reverse for successful breeding.

Growth and fattening will proceed where there may be a large amount of fresh water and a strong current; the former would prove prejudicial to spatting, and the latter tend to prevent the adhesion of spat at least in the locality at which it is voided.

Good spawning grounds have on the other hand been found less suitable for purposes of fattening—pure sea water and a clean bottom, essentials for successful spatting, not being always advantageous for the other purposes, hence it is usually found in rivers and estuaries that oysters breed better at the mouth and fatten best higher up.

There are, however, instances where the two processes are found to thrive simultaneously on the same banks.

If we refer to early English history—to the time of the invasion of our islands by the Romans—we discover that those warriors had not landed long upon our shores before they became acquainted with our oyster-beds, and British oysters soon formed an article of extensive export to Rome.

At this period oyster culture was conducted by the Romans in the Lake Avernus on precisely the same principles as that recently introduced into England.

The present diminution in the supply of oysters appears to have commenced some 10 or 12 years ago.

Since that period a greatly increased demand for oysters has resulted from the greater facilities of transport to places where previously fresh oysters had seldom reached.

Another circumstance has also added considerably to the demand, viz., the more frequent use of oysters, owing to the fashion prevalent both in England and France among the wealthier classes of consuming them at almost every meal. This materially enhances the price and has led to a vast increase in dredging.

In 1855 the price for native oysters was 41*s.* per bushel, and in 1879 it is £10 2*s.*; a similar rise has taken place in seconds, while commons in 1855, were 3*s.* 10*d.* per bushel, and in 1870, from 10*s.* to 18*s.*

Considerable difference of opinion exists as to the cause of this decrease—some authorities contending that it is altogether due to over-dredging—others to failure in the natural production of spat.

It would be tedious and confusing to enter into the various opposite theories (many of them deserving of attention) as to the cause of the decline.

Both of the above influences have doubtless adversely affected the production of oysters. If at the period when reproduction takes place a rise or fall of the temperature beyond a certain degree occurs, especially if such change be sudden, it is likely to be attended with injury to the spat—no doubt there have been years when the spatting season was cold and variable, and storms are also said to have taken place at the same period in other years. Conceding that the scarcity is in part due to the foregoing cause, it is a natural one, and one which we cannot well deal with; but the principal cause of the scarcity is attributable both in France and England to over-dredging; and this we can deal with, to a certain extent counteracting its effects by wise legislation.

No better illustration can be given than the advantageous position which Ireland occupies when compared with either of the other countries. That her natural beds have suffered much less from exhaustion may be attributed in a great measure to the enforced close time and other salutary regulations made by the Commissioners of Irish Fisheries, which are not in existence in England, and only lately came into operation in France.

Various branches of Oyster Fisheries.

The oyster fisheries may be divided as follows:—

Firstly.—Natural banks where without any action on the part of man oysters are propagated.

Secondly.—Banks partly natural and partly artificial—as those in the rivers at Auray and other places in France, and of Essex and other places in England—where the production is aided by laying down fresh cultch and stock and keeping the beds clear of dirt and vermin.

Thirdly.—Foreshore cultivation—where the spat from oysters on natural banks is saved or caught on collectors placed for that purpose.

Fourthly.—The method of cultivation in enclosed spaces such as Lake Fusaro in Italy, at Hayling, the Isle of Wight, and other places.

Natural Banks.

France.—To obtain information with respect to the natural banks the Commissioners visited Arcachon, La Teste, the Ile d'Oleron, the Ile de Ré, Auray, Concarneau, St. Brieux, Granville, Cancale, L'Orient.

Channel Islands.—Jersey.

England.—The Solent, Langston, Emsworth, Herne Bay, Milford, Tenby, Bristol, Beaumaris.

Ireland.—Arklow, Wexford, Waterford, Dungarvan, Cork, Kinsale, Baltimore, Bantry Bay, Kenmare, Tralee, Shannon, Ballyvaughan, Kinvarra, Galway, Roundstone, Cleggan, Ballina-

hinch, Clifden, Killery, Ballinakill, Clew Bay, Sligo, Lough Swilly, Lough Foyle, Belfast Lough, Carlingford Lough.

For partly Natural and partly Artificial.

France.—Arcachon, La Teste, Ré, Chattellalion, Auray, Concarneau.

England.—Whitstable, Faversham, Herne Bay, Paglesham, Colchester, Ipswich, Harwich, Brading, Cowes, Newtown, Hamble.

Ireland.—Queenstown Island, Cork, Fota Island, Sneem, Kenmare, Kilrush, Clonderlaw Bay, Kinvarra (Burrane), Ballinahinch, Clifden, Clew Bay, Sligo, Lough Swilly, and Carlingford Lough.

For Foreshore Cultivation.

France.—Ré, Oleron, Arcachon, La Tremblade, Marennes, Chatellalion, Auray.

England.—None.

Ireland.—East Ferry, Queenstown Island, Shannon.

Enclosures.

France.—Regneville—for breeding. Marennes, La Tremblade, Ré, Oleron—for fattening.

England.—Hayling, Brading, Cowes, Newton, Lymington, Herne Bay, Nacton, Fagborough, New Brompton.

Ireland.—Derreen, Tramore, Shannon, Lough Swilly, Sneem, Carrig Island.

Owing to the great scarcity of oysters which had arisen, considerable efforts were made in France and England, especially the former, to promote the production of oysters by artificial means. As the earlier steps for that object were taken in France, it is deemed best in the first instance to give a sketch of the measures adopted there for the preservation and restocking of the public oyster grounds, the system of artificial cultivation, and the Government regulations with respect to this branch of the fisheries.

The chief sources of oyster supply in France are, first—the deep sea natural beds in international waters, the fishing of which is regulated by the convention between England and France (*see* Appendix A), extending with more or less perfect continuity from Nordenaye on the Hanoverian coast to Brest.

The beds which give their names to the best known varieties are those of St. Valery, Fécamp, Cape Le Héve, and Calvados; the remainder, which exist more in mid-channel, being comprised under the general name of "Channellers."

The banks exclusively French within the three-mile limit are mentioned above.

The process of collecting oyster spat on stones, &c., has been practised at the Isle of Oleron for upwards of half a century without attracting much attention, a fact which has not been previously noticed by any of the writers upon oyster culture, it having been erroneously supposed to have originated at the Ile de Ré, whereas the parc* system which Hyacinthe Bœuf introduced into that island was but a modification of the system followed at Oleron.

Bœuf's discovery is said to have been altogether accidental,

* For engraving of a parc see p. 24.

arising from his storing oysters within a small stone enclosure, and finding some time afterwards that a large quantity of spat had adhered to the stones.

Encouraged by this, Bœuf in the ensuing year made a larger enclosure on the foreshore and laid down more oysters and stones; the result was most successful, and many of his neighbours, seeing this, engaged in like enterprises, and were so well remunerated for their trouble and outlay that an extensive cultivation on this plan was soon in operation on various parts of the shores of the island. These layings do not extend below low-water mark, and in most places the water is retained by small embankments.

To show how extensive these enterprises are, a map of the Island, showing the various parcs, &c., is appended.—*See* map of Ile de Ré, Plate 1, Appendix.

The results were much greater the first few years than they have been latterly, as will be seen by the following figures—

RETURN of OYSTERS sold from the ISLE DE RE PARCS.

Year.	Number of Oysters.	Value. £
1857,	Nil.	Nil.
1858,	Nil.	Nil.
1859,	157,500	126
1860,	401,350	321
1861,	1,615,000	1,315
1862,	2,780,740	2,120
1863,	5,650,250	4,535
1864,	3,376,440	1,818
1865,	1,919,900	2,020
1866,	1,181,000	1,516
1867,	879,713	1,245
	18,051,893	14,816

The young oysters are usually removed from the stones at one year old. They are then placed in claires* to grow and fatten, the time they remain in claires varying according to circumstances in the different localities.

The cause assigned for the recent failures was the improvidence of the concessionaires in selling off all their stock as soon as it was marketable, and leaving none from which to replenish the beds. But to a large extent it is probably also attributable to the stones, tiles, or other collectors being in a cleaner condition during the first year than they were afterwards, sufficient care not being taken to keep them free from mud and weed, without the observance of which precautions the adhesion of spat to collectors is very doubtful.

At the Ile d'Oleron, fifteen miles from the Ile de Ré, slabs of stone from one foot to two feet high by half a foot broad are placed on the shore to collect the spat which is drifted to them from the natural beds. Unlike the process at Ré, no parent or breeding oysters are placed near the collectors, the spat being altogether derived from the natural oyster grounds in deep water.

From the fact that in no instance, so far as we have ascertained, have either foreshore cultivation or enclosed breeding ponds

* For engravings of claires see plates Nos. 7 and 8.

proved successful at any considerable distance from natural banks, or where such formerly existed, it would seem that their existence forms an important desideratum in successful culture. Instances will be mentioned hereafter where under supposed favourable conditions cultivation has proved abortive, and where no apparent reason could be given beyond the fact that no oysters existed in the adjoining sea, or had ever been known to exist. It is reasonable to suppose that where oysters are absent naturally, and have always been so, some important conditions necessary for their development must be wanting in the water, soil, or temperature, &c., and this would probably also militate against artificial culture.

Considering the numerous oyster banks which have existed and still exist, the vast amount of spat annually voided, and the great distances to which it is carried by tides and currents, it is difficult to suppose that there is a square yard of our coasts that has not been visited by spawn, and it would therefore appear that in those places where oysters are not found nature protests as it were against them.

One instance of oyster breeding in France on the enclosure or tank system is that of Madame Felix, at Regneville, which will be hereafter more particularly alluded to, nearly all the other breeding operations being on the foreshores.

In some places oysters are subject to exposure of more or less duration. In most parts of Ireland this would be attended with considerable risk from frost in winter, unless provision were made for having them submerged, as is the general practice in England.

Although the cultivation is much less remunerative than it was formerly in France, still even in its present depressed condition it pays better than any other industry pursued by the same class for the labour and capital expended upon it, and possesses the advantage of interfering but little with other occupations, as the attention required to be bestowed on oysters, could be given at times when those following agriculture would be at leisure.

The most encouraging instances of successful cultivation in France are to be found at L'Orient and Auray. At the former, M. Charles, the principal cultivator, shows by his returns that during the past six years his operations have, making every allowance for indifferent years, been remunerative.

At Auray cultivation is carried on on the rivers La Trinité, Bono, and La Crach. (*See* Plate 2, Appendix.) Each of these possesses oysters naturally, besides which others were placed near the collectors, which consist of stones and tiles—the result has been most successful on the eighty-eight parcs—as many as 300 oysters having been found on one tile; and the instance of M. Le Rouse is a good illustration of the success which has attended the cultivation of these rivers. His parc on La Trinité, at Carnac, contains 900 square metres. The first year of his operations, 1866–1867, he sold 300,000 oysters; the succeeding year was not so good, but he was able to pay off all his outlay out of profits. He is extending his operations, and

expects to profit at the rate of 20,000 francs per year. On the same river there are five other large proprietors; and seventy poor peasants who have received assistance from the Government, have also commenced operations.

All these rivers have a bottom of clay similar to that of the Essex rivers, and other localities where oysters are most productive.—(See Analysis in Appendix H.)

At the parc du Forêt, three leagues from Concarneau, the Government layings have proved successful.

In proceeding to notice the Government enterprises—at St. Brieux and Arcachon—it will be desirable as well as interesting to state the circumstances under which the Imperial Government undertook oyster culture at those places.

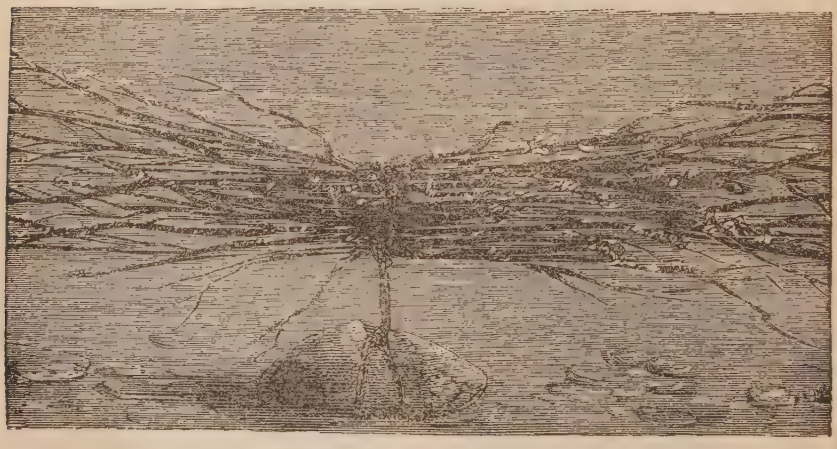
In 1858, owing to the great scarcity of oysters which had prevailed for some time, M. Coste, a most distinguished member of the Institute of France, who had for some years devoted himself to the study and promotion of pisciculture, turned his attention, with most important results, to the promotion of oyster cultivation. By command of the Emperor he entered into an inquiry on the subject, visited what may be called the parent source of oyster culture—Lake Fusaro, in Italy, and commenced operations in France.

The result of his researches and efforts is to be found in his justly celebrated work addressed to the Emperor, which should be read by all who desire to be conversant with the subject.

It is much to be regretted that but a very brief notice of what that eminent man accomplished can be given.

One of his first undertakings was carried out at St. Brieux. This consisted of placing parent oysters at certain distances on the bottom of the bay, over an area of forty miles, and fascines or bundles of twigs were sunk attached to large stones. The result exceeded all expectation, as many as 30,000 oysters being in some instances attached to the fascines—nearly all were plentifully covered.

Fig. 10.



Fascine at St. Brieux (with the spat attached).

Unfortunately, however, this most promising experiment was frustrated by severe storms which covered the bottom of the bay with sand so as to completely bury the fascines.

M. Coste's next operation was at Arcachon, on the Bay of Biscay—a landlocked basin of 100 kilometres circumference, and containing 1,500 square kilometres in area, equal to about 50,000 English acres. See plate 3, Appendix.

Many years ago a very important oyster fishery had existed there, yielding annually nearly 80,000,000 of oysters, valued at £10,000. As alleged, this fishery became nearly destroyed from over-dredging. Under M. Coste's directions in 1859, two Imperial parcs, Grand Ces and Crastorbe, were constructed. The first collectors used were wood, to which shells, &c., were attached by a resinous cement: these decayed rapidly, and were replaced by tiles, shells, and stone collectors.

The first two years the proceeds were very considerable; subsequently there was a great falling off—but 1869 appears to have produced a very large crop. During six years the quantity removed from the Imperial parcs was nearly sixteen millions of oysters—this is independent of the parcs of private proprietors —many of them concessions or allotments by Government, varying from one to eight acres.

A long grass-like weed—Zostera marina—which grows in great quantity on the beds, proves very useful in protecting the oysters at low tide from the heat of the sun.

Besides the area under cultivation there are several natural beds in different parts of the basin, all subject to the Government regulations which will be hereafter more particularly described.

The great bulk of the oysters bred at Arcachon are sent to Marennes and Tremblade, where the green tint so much esteemed in France is imparted to the beard of the oyster, but against which so unjust a prejudice exists in England as regards the Essex oysters, most of which are in consequence sent to France—the cause of the greenness being probably the same in both instances—the presence of Diatomaceæ (see figures 11, 12) and not, as at Falmouth, owing to the presence of copper. Oysters impregnated with the latter are always green in the body, whilst those of Marennes and Essex are green only in the beard or "fin."

Fig. 11.—Achnanthes longipes: a Diatom found at Chattellalion.

Fig. 12.—Various Diatomaceæ found at Hayling.

The time required for fattening depends altogether on locality. At Marennes, an oyster grows fat more rapidly than in the claires of the Ile de Ré.

The only instance of importance of enclosed or tank cultivation in France which we visited is that of Madame Felix, as already stated. Her experiments proved most successful. The enclosure is about four hectares (about ten acres) in extent; in this 11,000 oysters were placed and 11,000 tiles. The first year, 1864, the tiles were covered with spat, some of them having as many as 103 oysters, and the least of them about 20.

Madame Felix contemplated operations on a much larger scale, having only entered on the one described to ascertain what could be accomplished. Owing to private causes, as well as some local opposition offered to her enclosing a larger portion of the bay, she has suspended further action for the present.

Natural Oyster Banks.

With respect to the natural oyster banks of France, most of them became so denuded of oysters down to 1850, as to be hardly worth fishing, and some, formerly of great importance—such as those of Cancale, Granville, &c.—have been all but destroyed.

The most important authorities on the subject in France combine in attributing the exhaustion of the natural banks mainly to over-dredging.

In 1850, the French Government became alive to the urgent necessity of adopting stringent measures to prevent the threatened destruction of the comparatively few that remained on the natural banks, as well as to endeavour to replenish them where exhaustion had taken place. The laws for this object are very effective. (See Appendix B.)

In brief, it may be stated, that the Government assume the

entire control over all the oyster banks and foreshores. As occasion may seem to require, an entire bank may, for a certain time, be altogether reserved against dredging operations, or any portion of it. The general practice seems to be to mark or buoy off a third or fourth of a bank each year; the remaining portion being dredged for a specified time by the persons permitted during the number of days allowed for the operation—the reserved portion being also dredged for a few days to clean it of weeds, mud, and vermin. The following year another part of the bank is reserved: occasionally portions are reserved for a longer period.

Everything relating to oyster fisheries is decided on by a local Commission.

This Commission is presided over by the local inspector of fisheries, or officer commanding the fishery guard, and is composed as follows:—

The inspector of fisheries or a syndic.
The officer commanding the fishery guard.
Two gardes maritime.
One fisherman, being Master of a boat.

A copy of the detailed instructions issued for the guidance of the Commission is annexed (see Ap. B.), but the following embrace the more important principles laid down:—

(Art. 2.) The beds should not be opened for fishing until the spat has acquired strength to resist the action of the dredge; until the end of January, for example.

(Art. 5.) When a bed has well established breeding capacities, a fourth or fifth part of its total area should be set apart as a reserve, and dredging over such part entirely prohibited.

(Art. 6.) A fishery guard boat should, whenever practicable, take part in the working of each bed.

(Art. 10.) When a bed is foul or encumbered with weeds or other matter noxious to the development or adherence of spat, it should be opened for dredging until cleaned.

(Art. 11.) Beds on which there is never any production of spat shall be opened all through the season.

(Art 12.) After the working of any bed is over, it should be carefully inspected, and, if necessary, replenished with proper "cultch," stones, shells, &c.

Trawling is prohibited within 525 yards of any oyster bed.

The capture of oysters is strictly forbidden between the 1st May and 31st August, within the three mile limit, and as far as French boats are concerned the close season fixed by the Convention at from 15th June to 31st August is also strictly observed in the international waters, although continually broken by English fishermen.

Grants of foreshore or concessions are made to persons desirous of cultivating oysters, the grants in most instances being much smaller than in Ireland, and not possessing the same advantages as to length of tenure.

Undoubtedly benefit accrues to the small cultivators of the soil near the sea from these grants of foreshore, either for breeding or fattening purposes, and the Government encourage such enterprises by affording facilities for obtaining stock from the Government reserves, and by occasionally making free grants both of oysters and tiles. Sailors, or the families of sailors, serving or who have served in the Imperial Marine, are allowed certain advantages over other applicants for such concessions.

The oyster and other fisheries are under the control of the Minister of Marine Department, forming a special branch under the able administration of M. de Champeaux, assisted by a permanent Commission of nine members, of which M. Coste is the head.

On the coasts the Commissaires d'Inscription Maritime are, in addition to their other duties, charged with looking after the fisheries, having under them divisional Inspectors, and occasionally other subordinate employeès. This system, as regards supervision, affording information to fishermen, enforcing regulations, and collecting statistics, appears admirable, and has been productive of vast advantage to the fisheries of France.

Causes of Decline of Production.

It is now proposed to give somewhat more in detail an account of the various methods of cultivation existing at the places visited, and the causes which in the opinion of the Commissioners have led to the failure or decrease of the fisheries.

The wonderful increase in the yield of the natural bed of Cancale from 400,000 in 1815, to 70,000,000 in 1847, and the subsequent equally rapid decrease, is a subject which, as it bears upon the restrictions necessary for the Irish deep-sea beds, deserves attention. The return is given at length in the Appendix C. Here we have a long period of rest, and almost absolute cessation of dredging, and the fact of a vast accumulation of oysters taking place. Then follows the onset of a large fleet of boats without restrictions, which produces in a few years the destruction of the bank. Comment is needless.

Similar agreement in the main points is presented by the returns of the public beds of Arcachon; and we are happy to be able to say that the present regulations are already producing a steady improvement in the fisheries. It must be borne in mind that in certain conditions of soil, &c., the absence of dredging may be an evil instead of a benefit to the ground.

Cases of this kind are those forming the subject of a recent report by Mr. Cholmondeley Pennell to the Board of Trade.

Mr. Pennell states that the Fish and Oyster Breeding Company have cleared 100 acres of the portion of the Blackwater estuary and thirteen acres of ebb-dry foreshore. Of the state of this ground when it came into the company's hands, Mr. Pennell remarks that it was, for all practical purposes, barren of oysters, and the "cultch" covered with mud and overrun with vermin and weeds.

Fifty six hauls of the dredge in 1867, before the company was established, resulted in nine brood and spat, and nine oysters of larger growth.

Recently (writing in 1870) Mr. Pennell states that *two* successive hauls gave—First haul, three brood and sixty-eight spat; second haul, three brood and seventy-five spat (oysters of larger growth not counted), or an increase of 450 to one as compared with 1867.

A stock of oysters to the value of £11,631 had been laid upon the ground in 1868 and 1869.

The Roach River Company have reclaimed thirty acres of similar foreshore and 270 acres of ordinary ground, and the result is equally satisfactory. In 1864, 150 hauls of the dredge gave a total of thirty-eight oysters of all ages, and in 1869, one haul gave 100 brood and 153 spat, or an increase of brood and spat above 1,000 to one as compared with 1864.

That oysters cannot be dredged too much, is the opinion of the oysterculturist from the muddy rivers of the east coast, while those who have ground in rapid and clear water, depose exactly the opposite—that rest *is all* that exhausted grounds require.

We have no hesitation in saying that all laws, to be beneficial, must consist of regulations adapted to the requirements of the locality, and not consist of a series of general rules arbitrarily adopted and enforced in despair of obtaining the truth when evidence so very conflicting is offered.

The cultivation of the foreshores at Auray we have already mentioned as a success. From the bridge to the sea, a distance of twelve miles, the shores of the rivers are the scene of oyster cultivation, such as, we trust, will in a few years be seen on many river banks both in England and Ireland. The process is of the simplest kind. Each concession, duly bounded and marked by a numbered post or stone, contains nothing more complicated than rows of tiles arranged so as to offer clean under-surfaces for the adhesion of the spat, which rises from the preserved banks in the river. To keep these clean, to remove all oysters of a year's growth, to lay them in claires to develop and grow, is all that is needful, and the result is entirely satisfactory. Upon the length of foreshore named no less than 88 parcs have been constructed. The number of oysters at the time of our visit on some of the tiles was stated to be three hundred.

The cultivation at the other places named—Ile de Ré, Ile d'Oleron, Rochers d'Aire, Chattellalion—is the same, modified as to the nature and arrangement of the collectors as required by the conditions of the locality. The western coast of Ré is open to the full force of the Atlantic, and appears about as unpromising a place for oyster culture as one can imagine. The energy of the inhabitants, prompted, no doubt, by the success which attended the parcs at Rivedoux, on the south coast, overcame all difficulties. The commune of Ars boldly attacked the enterprise under all its apparent disadvantages. Blasting the rocks, they constructed their enclosing walls of great strength, and removed the mud, which lay to the depth of a foot on the shore. The same stones furnished

also rude but cheap collectors, and these they arranged in parallel rows. A considerable depth of mud was removed from the shore and utilized in the parc walls, which were thus made water-tight.

The cost of a parc of thirty yards square so constructed was stated at £12, and the number of such increased very considerably in a few years.

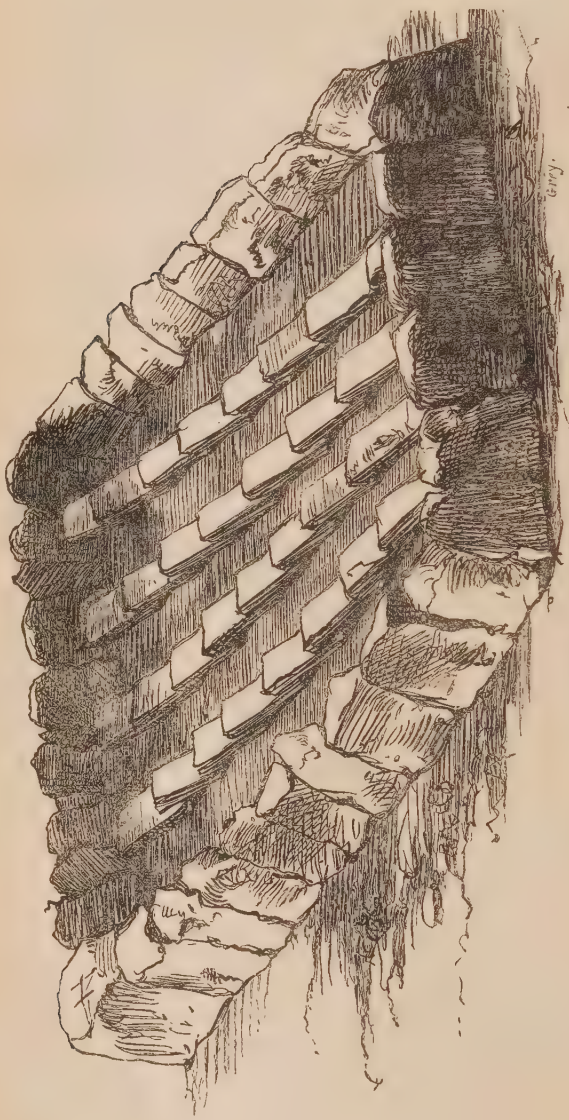


Fig 13.—Arrangement of Collectors in a parc at the Ile de Ré.

Fig. 14.—Arrangement of Stones as Collectors at Ile de Ré.

The total sale of oysters is given by the officials at 18,000,000 from 1859 to 1867; but by Dr. Kemmerer the correct number is stated to be 40,000,000, a discrepancy accounted for by the fact that correct returns are not made by the peasants for fear of increased taxation.

There is no reason to doubt but that the decline in production at Ré, Oleron, and other places where foreshore cultivation was so remarkably effective at the commencement is to be attributed to the dirtier state of the collectors, and also to the fact that the natural beds having been depopulated in the first instance to stock the pares, the parent oysters were subsequently sold, and thus the source of spat was removed.

The proprietors themselves admit this to have been the case, thinking sufficient spat would settle from the young oysters attached to the stones. This expectation, however, they found to be delusive, and in the present season means are to be taken to renew the stock and collectors.

England.

The diminution in oyster production which has taken place in England is not so great as in France—still it has been very considerable.

Great natural beds exist, or have existed in the estuaries of the Thames, Medway, Blackwater, the rivers of Essex and Suffolk, in the Solent, in Langston and Chichester harbours, Milford, Tenby, and other places.

The Royal Commissioners in their report on the sea fisheries of the United Kingdom, page 105, state—"That the supply of oysters has very greatly fallen off during the last three or four years," and this statement needs no confirmation from us. The same causes as exist in France may be assigned for it.

Besides the public beds before named, a very large number of oysters are obtained annually from private grounds in the Thames, the Blackwater, Colne, Roach rivers, in Essex, and from the rivers in Suffolk, from the Isle of Wight, from Cornwall, and elsewhere. These fisheries are held either by corporations, as at Colchester and Ipswich, or by private persons and companies as lessees or otherwise. Such private oyster beds are almost invariably well cultivated, very considerable trouble and expense being bestowed on them by the proprietors, whose efforts are mainly directed to keeping the bottom of the river free from slob and weeds, and destroying the enemies of the oyster, as starfish, crabs, the dog whelk (*purpura Lapillus*), and rough whelk (*murex erinaceus*), &c., engravings of which will be seen on the next page.

The first encloses the oyster in its grasp, and breaking off the edge of the shell contrives to devour the fish, whilst the whelks bore through the shell, and, it is supposed, abstract some fluid portion of the oyster, leaving the more solid parts to be eaten by the crabs, which follow in the wake of the whelk.

ENEMIES OF THE OYSTER.

Fig. 15.—Starfish.

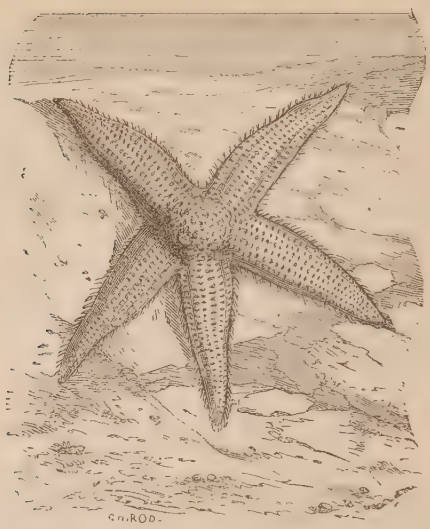


Fig. 16.—Rough whelk. Bigorneau. (*Murex Erinaceus*).

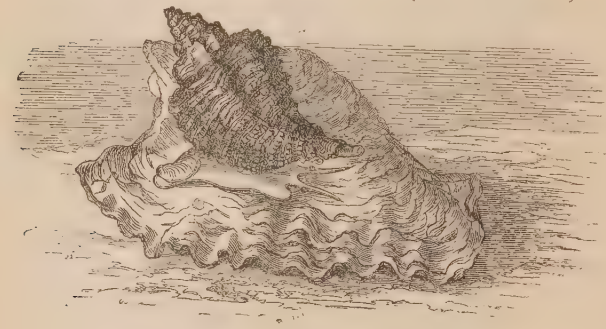


Fig. 17.—Spawn of Dog whelk.

Besides cleaning the bed of the river for this purpose by the almost constant use of the dredge, which is in part necessitated by the large amount of mud held in suspension by the rivers on the east coast, the foreshores are carefully strewn with cultch, consisting of shells, &c., above and below low water mark. The soil is usually of the same character, blue or London clay.

In the Roach, the beard or fin of the oyster is of the green colour so much esteemed in France, where they are usually sent in consequence of the groundless prejudice against them in England, where they are wrongly confounded with the Falmouth oysters, which are green in the body, owing to the presence of copper in the water, of which the Essex rivers are altogether free, the greenness arising probably from the green weed growing on the banks resembling, in many respects, that at Marennes.*

The greenish discoloration of the body, which is an indication of copper, is not at all observable in the Essex oysters.

In England several attempts at so-called artificial culture have been made, under which misnomer all efforts to increase the means of breeding and fattening oysters must for the sake of convenience be classed. An attempt made at Southend, in Essex, to cultivate the foreshores by placing tiles as collectors of spat in 1864 was unsuccessful, but the reason is not known, nor the conditions under which the experiment was made. In the Roach the culture was attempted with fair prospects of success; but owing to the reprehensible practice of the passing barges grounding needlessly on the banks, the experiment was per force abandoned, and the cultivation now employed consists in spreading fresh cultch along the shores, just above and below low water mark, during the spatting season, and the trouble and expense gone to by the proprietors of oyster grounds to obtain fresh supplies of cultch, proves the importance they attach to the cleanliness of their spat collectors. The most important, from its magnitude, as well as the great success which attended its earlier operations, is that of Hayling Island, on the Hampshire coast. It is on the enclosure system. The collectors employed are hurdles, fascines, and twigs. Operations were commenced in 1866, and a spat obtained the same year in a pond of four acres; in 1867 the area under cultivation was increased to three ponds, containing altogether thirty-four acres, the largest of these (eighteen acres) contained in the spatting season for that year a wonderful amount of spat, of which some idea may be formed, when in addition to three millions saved, many millions perished for want of adequate provision for their reception. It comprises

* Green Bearded Oysters, River Roach, Essex.—41, Finsbury-square, Dec. 2nd, 1863. Fredk. Wiseman, esq. Sir,—In accordance with your request I have made a very careful examination of the Green Oysters from the River Roach, or Crouch, which you left with me for analysis yesterday, and I find that the green tint which is present in the gills only of the oyster is due entirely to a natural pigment which does not contain a trace of copper or other deleterious matter. The oysters are therefore perfectly nutritious and wholesome.—I remain, sir, yours truly, Hy. Letheby, m.a., &c., Professor of Chemistry in the College of the London Hospital, and Medical Officer of Health and Food Analyst for the City of London.

an area of eighty to ninety acres, available for breeding ponds, of which there are five, of various sizes, from four to twenty-eight acres. For plans of these beds, &c., see plate No. 9, Appendix.

The Herne Bay Oyster Company's breeding ponds were established with a view of assisting in the stocking of the extensive layings of the Company (nine square miles) in the estuary of the Thames.* Further down the bay there has been a small experimental undertaking at Reculvers.

The Brading Oyster Company in the Isle of Wight have ponds of about three acres in extent, using tiles, slates, and hurdles, &c., as collectors, and obtained a good spat in 1869.

At Lymington, ten acres of ponds produced some spat.

We are not aware how far the foregoing undertakings have been commercial successes.

The ponds of George Tomline, esq., at Nacton, on the Orwell river in Suffolk, gave a spat in 1867 and 1869, but not in 1868. The collectors were hurdles, tiles, &c.

The Medina Oyster Fisheries Company at Cowes and Newtown in the Isle of Wight was established to work two oyster fisheries at the above places. They have breeding ponds of twenty-four acres in extent in connexion with the fisheries, and have obtained a considerable amount of spat; but how far their breeding operations have answered their purpose we are not in a position to determine. They have, however, valuable fisheries independent of them on which they chiefly rely for profit. Artificial operations are carried on elsewhere, but are not of sufficient importance to call for notice.

Nearly all these ponds are similar, the chief differences being in size, and in the kind of collectors used, some consisting of tiles, others twigs, or fascines, slates, stones, and shells, attached by tar or cement to boards. The depth of water varying from two to ten feet.

Jersey.

The seas about the Channel Islands, especially Jersey, formerly abounded in oysters—the increased demand led to a vast increase in the number of dredging vessels.

Thirty thousand pounds has been realized from the beds per annum, and employment afforded to 400 vessels, whilst now a precarious livelihood is earned by the crews of three or four. (See Appendix D.)

According to the most intelligent and reliable persons who gave evidence, this falling off must be mainly ascribed to over-dredging.†

* This Company has expended a large sum in laying down oysters, both for fattening and breeding, on these grounds. We dredged over a portion of them, and found spat plentifully adhering to the cultch.

† A gentleman well acquainted with the Jersey Oyster Fisheries has stated that—"The value of the Jersey fishery has several times nearly reached £30,000 a season, but for the last three or four it has been gradually getting worse and worse, and is now scarcely worth working. . . . I am informed by an owner of an oyster smack that about three or four vessels only now work the ground instead of nearly three hundred six years since, that nearly all these are now at work in mid-channel, and it would not pay even to work these three or four constantly, in consequence of which the owners fill up their time with work

Scotland.

In Scotland the more important beds of the Forth and Lough Ryan are private property, and have been preserved by a close season and regulations against taking oysters under a certain size. In the Forth dredging is prohibited from May 1st, to September 1st.

In Lough Ryan only a limited number of boats are allowed to dredge. A licence is taken out by each boat owner, for which he is charged nine pounds.

Some years ago important beds were discovered in Wigton Bay; no restrictions were imposed; in consequence they were soon dredged out, and the oysters may now be said to be almost extinct there.

Wales.

In Wales, particularly at Milford Haven and Tenby, a close time of four months, and restrictions with regard to the size of oysters allowed to be sold, had been enforced for some years. These regulations had a beneficial effect, but the increase of dredging boats has greatly diminished the quantity on the beds. At Milford there were only twenty-one boats dredging twenty years ago, they frequently took 2,000 oysters in a day; now there are 200 boats, the take in the day for each does not exceed from 100 to 200.

These instances go far to prove the wisdom of maintaining some regulations for the repression of indiscriminate dredging.

Ireland.

This Commission was appointed—1st, to ascertain as far as possible the cause of the decline in the produce of Irish oyster fisheries.

2ndly, To determine the means that should be adopted to arrest further decay, and to promote their resuscitation.

3rdly, To inquire into and report on the mode of artificial culture likely to prove most efficient for the purpose in view.

More minute details will therefore be entered into in relation to Ireland than were called for with regard to France and England, as the only reason for investigating the subject in those countries was to ascertain how far the information obtained might usefully bear on the paramount object of the Commission. A large mass of information which was collected in the course of the inquiry bearing on the English oyster fisheries, as well as many recommendations which suggested themselves to the Commissioners for their improvement, they have not considered themselves warranted in putting forward, as this would considerably swell the size of this Report, and would also subject the Commissioners to the charge of travelling outside their province.

on shore, in fact, the Jersey fishing appears to be almost 'dredged to death.' This is a desperate state of things, which might have been prevented by active measures at an earlier stage, but I fear no steps will be taken to remedy the evil. . . . . All oyster fisheries should be worked under wise restrictions, and under a certain size all should be thrown overboard on the dredging ground, some breeding stock would thereby be left; but now, in many places, it is a case of *ex nihilo nihil fit*, brood and mature oysters having been alike exhausted by over dredging."

However, should the Government at any time so desire, they will be fully prepared to furnish a complete report with respect to the oyster fisheries of the other portions of the United Kingdom, and to recommend the measures which, in their opinion, should be adopted for their preservation. Much, however, that is suggested with respect to Ireland will be equally applicable to England.

The oyster fisheries of both France and England were first investigated by the Commissioners before they proceeded to Ireland, and thus they had the advantage of knowing, before visiting the latter, every circumstance (as far as ascertainable) connected with the decline of the natural oyster fisheries of the other two countries, the success or failure which had attended attempted artificial cultivation, and the opinions of the best authorities on every point in connexion with the entire question. There was the further advantage in reserving the visit to Ireland until the last, as it could then be determined whether the modes of oyster culture, which had proved most successful on the Continent and in England, were applicable to Ireland.

Many theories founded on the temperature of the sea in various latitudes, and the effects of the Gulf stream, &c., having been more or less discussed in connexion with the breeding of oysters, it appeared desirable that simultaneous observations of the temperature should be made in different parts of the sea coast of the United Kingdom, and these observations were also extended to France.

The Admiralty were applied to for permission to direct the Coast Guard to perform the necessary duty on being provided with thermometers, which was readily consented to, and the work most efficiently performed. (See Professor Hennessy's report, founded on those returns, in the Appendix E.)

The First Lord of the Admiralty was also kind enough to place at the disposal of the Commissioners H. M. Steam Yacht "Vivid," which enabled them to go round the entire coast of Ireland and make the most searching investigations.

The principal oyster fisheries, taking them in the order of their magnitude, are those of Arklow, Wexford, Carlingford, Clew Bay, Cork Harbour, Achill, Belmullet, Clare, Galway Bay, Sligo Bay, Tralee, Belfast Lough, Lough Swilly, Lough Foyle, Estuary of the Shannon, Waterford Harbour, Dungarvan.

The Arklow and Wexford banks extend for forty miles along the coast at distances varying from three to fifteen miles. Formerly, a considerable decrease in the yield had taken place, it is believed, from over-dredging, consequent upon the increased demand; but owing to the extension of the close season, at the request of the fishermen, these beds now show an annual improvement.

Most of the oysters taken are bought for England to be laid down in fattening beds, as they are considered deficient in flavour when first taken from the banks.

The number of boats now employed, some carrying eight dredges, and a crew of six men, is 120; and the yield in the last season was valued at £28,000.

The Wexford banks may be said to be a continuation of those of Arklow; the number of boats, twenty-eight; the sum realized in 1869, £2,200. A great decrease as regards former years. Here, as at Arklow, by the desire of the fishermen themselves, the close season is now fixed from 30th April to 1st September. Twenty years ago the price per thousand was only six shillings, now it sometimes reaches nearly forty shillings.

In each of the other places a considerable diminution has occurred, attributed to over-dredging and the wholesale exportation of young brood, and in some instances to failure of spat.

Cases were not wanting in Ireland where positive injury had arisen from want of sufficient dredging, as in the Estuary of the Shannon, near Scattery Island, and at Clew Bay, where the result of some dredging operations, undertaken by the Commissioners, showed that a vast amount of weeds and dirt had accumulated on the beds which judicious dredging would have removed. The quantity of oysters procurable was, however, probably not worth the labour necessary from the unsuitable gear used in those localities.

The reasons assigned by the numerous witnesses examined as to the cause of the decrease on many beds around the coast were altogether hypothetical; nothing could well be imagined more contradictory, inconsistent, and irreconcilable than the assertions of persons, even from the same locality; each giving a different account as interest, prejudice, or opposition to what they deemed encroachments on their rights, prompted.

The only thing that could be relied on as a fact was the undoubted decrease of the oysters, but to account for it according to the evidence was simply impossible. *Pari passu*, however, with this diminution was made evident the fact of a large increase in dredging, so that it is only fair to assume that one of the reasons for exhaustion must have proceeded from that cause. There may also have been at the same time a certain amount of absence of spat, but whether this might or might not have been very much produced by diminution of stock, caused by over-dredging, combined with a reckless and wholesale export of the brood oysters, it is very hard to determine.

Perhaps one of the most important points for consideration is the extensive grants made by the Board of Public Works (in whom the management of the Sea Fisheries was vested up to the year 1869) of portions of foreshore and sea bottom, amounting altogether to 100 grants or licences as they are termed, and which comprise in the aggregate nearly 17,000 acres of some of the most desirable oyster ground in the country.

The smallest area so granted amounting to three acres, and the largest to 1,800 acres.

A list of these licences and the extent of the portions so allotted will be found in the Appendix F. These licences were supposed only to be granted after a full inquiry on the spot and satisfactory proof given that not only public rights would not be interfered with to any appreciable extent, but that advantage to the public would be likely to follow from increased oyster production.

It is much to be regretted that these undertakings have as a whole fallen very far short of realizing the expectations of those

who promoted legislation on the subject; hardly one of them has proved a commercial success, judging by the reports furnished by the proprietors in answer to the annual inquiries of the Board of Works, whilst most of them must be regarded as total failures so far as the production of oysters—the greatest object of all—is concerned.

In many instances the oysters laid down have fattened, and the grants have thus proved advantageous to the grantee; but this is a matter of small moment in comparison with the main object—increased production.

In giving to individuals a monopoly of what was previously a public right there is a power reserved in the later licences of withdrawing the concession at the end of three years if in the opinion of the Commissioners proper means have not been adopted to fulfil the conditions upon which it was given.

The exercise of this salutary provision is imperatively called for with regard to the great majority of the persons in possession of these grants, as the investigations made by this Commission clearly proved that, with rare exceptions, adequate means were not adopted to promote breeding, in the way of laying down a sufficiency of breeding stock, keeping the ground clean of mud and weeds, providing proper cultch or other collectors—many of the licensees contenting themselves with leaving the ground as they found it, or at best supplying an insufficient quantity of oysters for breeding purposes, laying down little or no cultch, trusting to chance for obtaining a spat and reaping what benefit they could from the oysters which were previously on the ground and the fattening of those placed there.

The Legislature never contemplated granting a monopoly of the shores or sea bottom merely for such purposes. Where the undertaking upon which such exclusive privileges were given is not fulfilled it should be withdrawn.

The Ballyvaughan, Red Bank, and Burrane beds of county Clare and that at Sneem in county Kerry are altogether used for fattening purposes. They do not appear to possess all the essentials necessary for reproduction.

The instances of tank or enclosed cultivation in Ireland are few, embracing—

1. Mr. Malcomson, at Tramore, county Waterford, about one acre and a half.

2. Mr. Power, at Kilmacleague, in the same neighbourhood, under one acre.

3. Mr. Sandes, of Carrig Island, on the Kerry side of the Shannon, under one acre.

4. Mr. Bland, at Sneem, county Kerry, consisting of about one acre.

5. Mr. Trench, at Derreen, county Kerry, comprising a space of ground twenty yards by thirty yards.

6. Mr. William Hart, at Fahan, Lough Swilly, comprising two and a half acres.

7. Mr. Henry O'Connell, at Burren, county Clare, a pond sixteen feet long by eight feet wide.

All have turned out failures, except No. 7.

Mr. Malcomson's consists of an excavated pond, extending over about half an acre, and 18 inches deep, it is situated at a place called the Back Strand, a considerable portion of which has lately been reclaimed from the sea. Arrangements were made for the admission of sea water when required; about 20,000 oysters were laid down, and fascines, oyster-shells, pebbles, and other descriptions of collectors employed; no pains or expense appears to have been spared to insure success, but during the three years the experiments have been going on not a single spat has adhered to the collectors.

It is quite possible that the pond was too shallow. That from its small size and exposed situation it was too open to heat, cold, or sudden changes of temperature; added to this, the tide, before it reaches the pond, sweeps over a wide expanse of sand and carries with it a great deal of sand, scum, and debris, which might more or less affect the well-being of the oysters.

Mr. Power's pond—about the same size as Mr. Malcomson's—is situated behind an embankment, and considerable trouble and expense have been unavailingly gone to by the proprietor to render the experiment successful. He takes much interest in oyster culture, and has visited various places in France and England to make himself acquainted with the best methods of cultivation.

The same causes disadvantageously affecting Mr. Malcomson's pond may have exercised a like influence over that of Mr. Power.

Although oysters are said to have existed in the neighbourhood formerly, none are to be found at present.

The fattening grounds of Earl Fortescue and Mr. Power, in the same locality, have answered satisfactorily, but no spat has been obtained there.

Mr. Sandes' small pond in the county Kerry, near the Shannon, was unfortunately constructed above high water-mark, thus necessitating the use of mechanical power to lift the water.

The collectors here used are boards joined together resembling doors and laid over the oysters. No spat has been obtained. From the difficulty and cost of raising the water, it is probable that it was not renewed sufficiently often.

Mr. Bland's pond at Sneem is a small enclosure of the end of a creek, but up to the present no spat has been obtained. No information as to temperature, density, &c., could be obtained with regard to these ponds.

Mr. Trench's pond was a small enclosure in Kilmacologue Harbour. No spat was ever found in the pond, the gravel on which the parent oysters were laid and the shells became partly buried in mud and covered with slime.

Mr. William Hart appears to have taken considerable trouble with his enclosure, using various descriptions of collectors; the place appears well circumstanced, but we cannot say if there has been any adhesion of spat.

Mr. Henry O'Connell used in his small pond for collectors parent oysters, old shells, stones, tiles, fascines, furze, and an old hamper. He reports that the latter was a splendid collector, and the shells, stones and oysters were very well covered with spat.

The locality of this pond is celebrated for its fattening properties, but hitherto hardly any production has taken place.

At Kilrush, in a small natural pond which cannot be regarded as coming within the enclosure system, Colonel Vandeleur has attempted breeding oysters without success, probably arising from the scour of the receding tide washing away the spat before it can adhere to the collectors.

Mr. Reeves' experiments in foreshore cultivation so far as production is concerned have been partially successful, a considerable quantity of spat from the natural beds in the river having attached to stone slabs placed horizontally for the purpose.

The same success has attended the experiments of Mr. John Smith on the Midleton River near Queenstown. The spat here, as at Mr. Reeves's, coming in from oysters in the river.

These are the only two instances of foreshore cultivation met with in Ireland.

Diminished as the supply of oysters is in Ireland, and suffering as this branch of fisheries is from exhaustion, there can be no doubt that the banks, both as regards stock and other conditions, are for the most part in a more satisfactory condition than those of the other portions of the kingdom or of France.

This comparatively favourable state is unquestionably due to the salutary regulations framed and enforced by the Board of Works whilst the Fisheries were under the charge of that department, the observance of close time, and the efficient service rendered by the coast-guard in carrying out these regulations. Great credit is due to the late Inspecting Commissioner of Fisheries, Mr. James Redmond Barry, for his constant and useful efforts to promote this as well as other branches of the fisheries; mainly to his representations and exertions is due the preservation of the oyster banks on the S.E. coast from being included in the conditions of the late Convention with France which would probably have proved most disastrous to the Irish oyster fisheries. Some additions to the present laws as respects the preservation and encouragement of the culture of oysters is required. (For an Epitome of these laws, compiled by Mr. Brady, Inspector of Irish Fisheries, see Appendix G.)

No circumstance is to be more regretted or calls more for interference in the interest of the seaboard population than the enormous quantity of small oysters of from one to two years old that are dredged and sold for exportation at prices as low as one shilling per hundred.

These, if kept and laid in the numerous places which might be selected for growing and fattening round the coast, would in three or four years, without trouble, and at hardly any cost, realize five or six times the amount obtained for them in an immature state.

The value of the oysters consumed in England annually is estimated at £4,000,000 sterling, and there is no doubt but that double that quantity would find ready consumption if obtainable.*

* "Suffice it to say, that such is the importance of this branch of commerce, that 700,000,000 of oysters are annually consumed in London alone, and quite as many, if not more, in the provinces. Now, supposing we value them at six-

The entire sum realized by the sale of Irish oysters is difficult to ascertain, but it does not exceed £50,000 per annum,* and assuming no increase whatever in production or capture, that amount might be greatly augmented by not allowing oysters under a certain size to be exported, and by affording the poorer classes greater facilities for obtaining portions of the foreshore for the formation of parcs and claires.

Whatever trouble and uncertainty attends breeding, there is but comparatively little with regard to fattening, and success in the latter would lead the way for experiments with regard to the former.

The various Methods of Oyster Culture reviewed and explained.

The most ancient method of oyster culture of which we have any record is that practised in Lake Fusaro, which has flourished more or less for about 1,900 years. This, no doubt, is the origin of all oyster culture in Europe. The following two cuts are illustrative of the methods by which oyster culture is there carried on. In the first, fascines are suspended some few feet above the bottom, to which the rising spat of the oysters becomes attached. In the second, artificial heaps of stones are thickly surrounded with stakes, and on these the oysters become fixed, and the stakes are drawn or the stones lifted for the purpose of

Fig. 18.

pence a dozen, which is certainly below the ordinary selling price, we shall then have an annual expenditure in England of about *three millions* sterling in oysters alone! Could any fact more powerfully attest the value of this branch of commerce?"—*From the Popular Science Review.*

"It is not easy to arrive at correct statistics of what London requires in the way of oysters; but, if we set the number down as being nearly 800,000,000 we shall not be very far wrong."—*From Bertram's Harvest of the Sea, p.* 373.

Assuming that as much oysters are consumed in the provinces as in London, and calculating the price at an average of only 5*s.* per 100, the result would be an expenditure of £4,000,000.

The vast proportion of these oysters are taken from the great ocean beds, far beyond the three miles limit, and from private beds also not under Government control.

* Ten years ago and even later oysters were sold at Arklow as low as 4*s.* per barrel; in 1869 they sold as high as 25*s.*—the average for the year being 17*s.* 9*d.* per barrel for all sizes. The sum realized for oysters in Ireland for some years past has, owing to the increased price, been about the same, notwithstanding the diminished production.

Fig. 19.

detaching any of the produce. The parent oysters, of course, are thickly scattered about and near these collectors. That the principles of cultivation are sound is evident from the long-continued success. If experiments in this country are not successful it is because the natural conditions are unsuitable, or because the oysterculturist lacks the skill and experience to carry his work to a satisfactory conclusion; for skill and experience are quite as requisite, if not more so, in the aquæculturist as in the agriculturist.

Oyster culture may be divided under three heads :—

1. Banks, which are always submerged.
2. Weed-beds (in France called crassats) or mud-lands, or foreshores, which are dry at low spring tides.
3. Tanks or enclosed areas of water where the in or out flow of the tides can be regulated at pleasure.

The first process is the simplest, since it consists of working over beds with the dredge at suitable seasons, in order to keep the cultch or shells on which the spat may collect clean. Another benefit derived from dredging frequently is that of preventing the oysters from running too much or too coarsely to shell; it tends to make a thinner, neater shell, and a more compact and shapeable fish. The dredge, too, removes vermin, weeds, mud, slime, &c., which, if not constantly disturbed, would overgrow the oysters and cultch, and destroy them as collectors of the spat.* The oysters also are evenly distributed, thin spots are supplied. Fattening grounds are picked for the market, and more oysters shifted to them from off the mere growing grounds. This is pretty much the *modus operandi* of the Colchester and Whitstable companies.

The Whitstable Company is the largest and wealthiest oyster corporation in the world; it is a co-operative chartered body, and the government is at once simple and effective. It cannot be said to breed largely, as it seldom obtains a spat upon its own

* Frequent dredging *is* practised in many places, but to save trouble the fishermen throw the weeds, &c., &c., overboard again after selecting the oysters, so that the frequent dredging does not produce the effect which it should.

grounds, and in former years trusted greatly to the spat from the large quantity of oysters it possessed floating on to the common ground known as "The Flats" (now the property of the Herne Bay Company), where the small oysters were dredged, and at low tide picked up, and sold to the Whitstable Company to be deposited on their grounds. The company also bought largely of the Essex dredgermen and others.

It is calculated that eight men per acre are required at Whitstable to work their grounds. Three days per week are also given to cleaning the ground, shifting oysters from one part to another, collecting the marketable-sized oysters into one place, destroying starfish and other vermin, and four hours of each other day are also devoted to this. During the other three days they dredge for the market, in which operation a certain quantity called "a stint" is assigned to each boat, which it must complete and must not exceed. When this quantity has been obtained the day's work is over.

Each evening the amount received from the sales at Billingsgate is divided by the managers, consisting of a foreman, assisted by a jury of twelve persons, all fishermen of the Company.

The Coln river is worked in a similar way by a body of fishermen under the Corporation of Colchester.

There are in Ireland many places where such a method of oyster culture could be advantageously applied, such as the large loughs, the estuaries of rivers, and the large bays with which Ireland abounds.

The cultivation of crassats (mud lands) and ebb-dry foreshores is available for either associated bodies of fishermen or individuals; it is confined entirely to the ground above low-water at spring tides.

It is especially adapted to the wants of a poor population, on a rocky coast, partly fishermen and partly farmers, such as we find in many parts of Ireland, and where the shores are suitable for cultivation, and the requisite materials abound on every side, only requiring labour to make them available. From Cork round westward, and still onwards even to Belfast and Strangford, there is scarcely an inlet where the residents on the coast might not improve their condition by cultivating the rocks and shoals which surround them;—they possess advantages far exceeding those of the inhabitants of the Islands of Ré and Oleron in the Bay of Biscay.

The first thing necessary is in the months of April and May to clear away the weed from the rocks, to construct roughly small enclosures with the large stones at hand, placing them so as to form a low wall about a foot high; an engraving of the method on which they are constructed is given at page 24. Oysters are not yet so far destroyed at most of these places but that they are yet obtainable by dredging, and if laid in the months named in those parcs would probably deposit a valuable spat; from July to the following May no care or attention is necessary.

In the case of estuaries of rivers, bays, harbours, or loughs, when the ground consists of mud banks or weed beds, the process is somewhat different. There parcs may still be made, but it becomes necessary to attend more to the cleansing of the collec-

tors. The collectors may be large flat stones if nothing better can be had; but tiles, as employed on the French plan, are easier to attend to, and easier to cleanse. These parcs may be simply enclosed spaces, with surrounding walls of stones so as to define each particular allotment; or in the case of a space of ground surrounded by the sea, belonging to an individual, or to two or three working in partnership, the method of placing the tiles either in rows or patches, as may be most convenient for the arresting of the spat, and as shown in figs. 20, 21, 22, and 23, may be adopted. At Arcachon the parcs are made upon this plan,

Fig. 20.

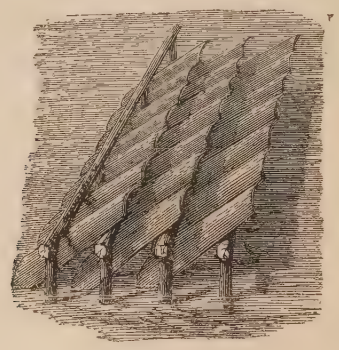


Fig. 21.

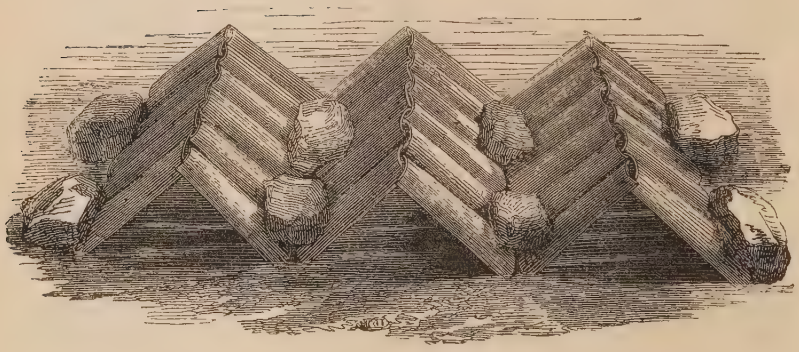


Fig. 22.

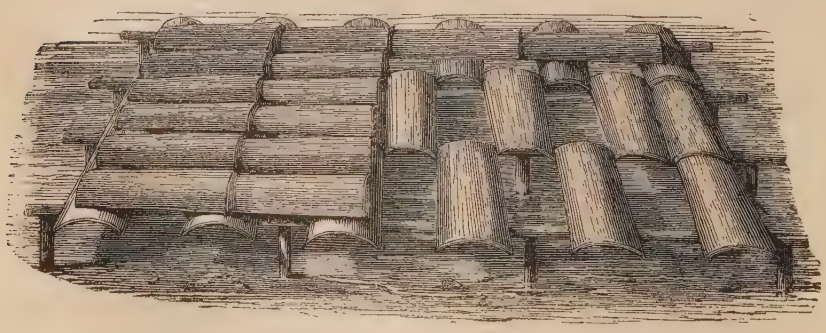


Fig. 23.

and answer admirably; a weed bed is chosen, a considerable part of which is dry at low spring tides. Upon this stacks of tiles laid crosswise, one tier above another, until they reach some three or four feet in height are erected and secured by stakes from injury by the run of the tide. About these the weed is hoed closely down, and the oysters are laid. When the spat rises it drifts under the tiles, and the under side being almost always clean, more or less spat adheres to it. If the top side of the tiles is sufficiently clean, as many will adhere to that also. Hundreds of tiles may be seen completely crusted over with oysters, as many as two or three hundred being fixed to one tile, so that hardly a portion of the tile is visible (see cuts of tiles covered with oysters, figs. 24 and 25). These stacks of tiles are erected about every twenty yards or so, the tops of the stacks being often protected by a thick planking, which is pitched on the under side, and is thickly strewn with shells of mussels, cockles, &c., which adhere to the pitch and receive a share of the spat. This cover-

Fig. 24.

Fig. 25.

ing aids to protect the young oysters from the effects of the sun during the two or three hours daily that they are exposed at low spring tides. Fascines, or faggots, or hurdles, are also used to arrest the spat, being pegged down in their places, and so secured from floating away; but these do not answer so well in open water as the tiles or stones. In foreshore cultivation shells are also scattered about near the oysters to receive a share of the spat; but these also should not be cast down until immediately before the spatting season. One great cause why collectors do not answer at times is, that they are often put down too long before the oysters commence to spat, and thus the tiles and shells, &c., become foul, and the wood gets greasy or slimy, and the oysters will not adhere to it. Another reason for a defective spat often arises from the fact of the oysters being laid down too short a period before the spatting season. The removal of oysters from one ground and depth of water, just before the spatting season, to another, is often found to be prejudicial. The shorter time which elapses between the laying of the collectors and the spatting of the oysters, and the longer time between the laying of the oysters and the spatting the better. Oysters laid on muddy ground often sink into the mud; so long as this happens gradually the oyster does not suffer, for it contrives by the flow of the water which it takes in and ejects, to keep a breathing hole open; but when this occurs from a sudden storm, so that the oysters are buried without the chance of securing an air hole, they mostly perish. In France it is customary when the ground is very soft, and the oysters sink, to raise them every two or three months, and replace them on the surface. In such cases, however, the oysters are usually put up for fattening, not for breeding, though oysters breed well enough either on mud lands or on weed beds. When the oysters are only laid on weed beds to grow or fatten, it is not customary to hoe the weed.

The long wet weed is found to form an admirable protection from the sun. In fig. 20 the tiles it will be noticed are placed on a slope; this is found advantageous in a strong current. When the tide runs for a long time in one direction, as in some rivers, and when the water is more or less muddy at times, the mud deposits on the back of the tiles, and the spat attaches on the other side. Fig. 21 is more applicable where the flow is equal, and where as much mud is likely to be deposited by the ebb as the flood tide. The other methods given in figs. 22 and 23 are employed indifferently in still waters, as in creeks, &c., and in open water, mud banks, weed beds, &c., in harbours.

For sketches of one of the imperial parcs at Arcachon, see plates 4 and 5, Appendix.

The tank system of oyster culture in reality differs little from that already described, as far as the placing of collectors and oysters is concerned. The fault of many existing oyster ponds, more particularly in Ireland is, that they are too small in area, and not deep enough. The larger they are, within reasonable bounds, the better and more natural they will be for the oysters. From three or four acres to ten or twelve is the most useful and most manageable size, while they should not be less than three feet deep, and should vary to the depth of ten or twelve feet. The water should have free access every tide, save during the spatting of the oysters, when no water should be allowed to escape lest the spat escape with it. But in very hot seasons considerable evaporation takes place, more particularly in small ponds, and this causes a good deal of disturbance in the density of the water, which is prejudicial. This therefore should be carefully watched, and should it threaten to become dangerous, it will be advisable to let in a portion of fresh water if possible.

Weeds are often very troublesome in tanks or ponds, more particularly the green filmy weed "cladophera," known commonly as "blanket-weed." This is very dangerous to the oysters, and means should be taken to remove it.

It is usual in ponds to gravel large portions of the bottom in order that provision may be made to catch that portion of the spat which fails to adhere to the collectors, and the shortest time before spatting that this gravel is cast in the better for its cleanliness. Hurdles and fascines however have been found to answer well in such places, and as a large number of collectors is required, they will be found much cheaper. Engravings of hurdles, fascines, &c., are appended, and the method of fixing them is shown also (see plate 6). They are fixed in rows by means of pegs, about two or three feet above the oysters, which are scattered on the soil under them, as shown in the engraving, though of course much more plentifully than they are therein depicted. Furze bushes are also found to answer fairly, and are cheap; but fascines and bushes are scarcely so suitable in a tideway in consequence of the liability of the twigs to catch weed, break, and float away, when the spat is carried with them. In all cases when wood is employed for collectors, it should be dry, hard, and sapless, and cut at least in the preceding season.

Oysters are more easily detached from wood collectors; the

Fig. 26.—Specimen of old oyster shell covered with young oysters.

Fig. 27.—Specimen of tiles and shells covered with growing spat.

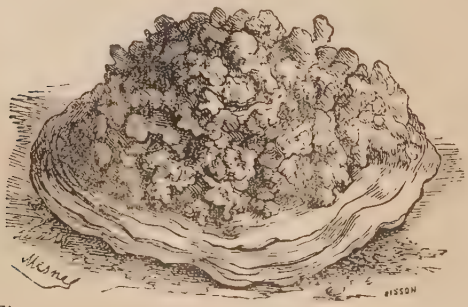


Fig. 28.—Specimen of old shell covered with *maerl*.

Fig. 29.

Spat on part of a fascine at Hayling, 1869.

loss by damage to the shell or fish in breaking them off is least upon fascines, as the twigs are easily broken up. It is greater on hurdles, greater still on tiles, and greatest of all on stones. The young oyster, though somewhat malformed at times on twigs, soon regains its shape when detached without damage. Engravings of oysters upon a twig and a stake are shown in figures 29, 30, 31. The latter represents oysters at various stages of their existence. E showing the spat at ten days, D at one month, C three months, B six months, and A at one year.

Fig. 30.

A, 1 year; B, 6 months; C, 3 months; D, 1 month; E, 10 or 14 days.

Fig. 31.

A method of coating tiles by dipping them in a thin mortar or cement so that the oysters might be more easily detached, has been invented by Dr. Kemmerer. As far as the detachment is concerned it is certainly an improvement; but collectors so coated are liable to collect the dirt more easily than others. The oysters are usually detached when they have made a suitable growth, so as not to be damaged in the operation, and this should be when they are about a year old.

The tank or enclosure method is more particularly adapted for companies, or individuals resident in the neighbourhood or the locality where such basins naturally formed exist, or where the enclosure can be rendered complete at a moderate cost. It is not adapted for the poorer class of the peasantry, but still it affords constant employment to a considerable number of persons, and it may be remarked that both for this and the foreshore cultivation the labour of women and children is available, a great portion of the duties required being of a light description.

Ireland presents from its peculiar configuration many places suitable for oyster culture in this way, which can be rendered productive to a great degree at a small cost.

With respect to the best kind of collectors to be employed on the Irish coast, these must be governed by the facilities offered by the neighbourhood, as they are very various.

Tiles are cheap in France, hence their introduction as collectors; the average cost is one sou each, or £2 per thousand. At Auray, one cultivator possesses 200,000 tiles, and upon these he obtained in 1869, six millions of oysters.

At such places, for example, as Tralee, Carlingford, Achill, Belmullet, and other localities, where the rocks naturally collect each year a large number of oysters, tiles would prove very effective. If too expensive for the class of persons who pick these oysters from the rocks, it would be worth while for some one to advance the cost, and receive it back in the following year when the harvest of oysters would enable the peasants to repay the loan; or, failing this spirit of enterprise in the inhabitants, the peasants should be instructed to break up the rocks, and place them in rows as already shown at page 24, so as to offer clean surfaces for the spat that rises from the bay.

The best arrangement of tiles in such places as Tralee and Bantry Bay, would probably be that shown in the engravings at pp. 37 and 38, Nos. 20, 21, 22, and 23; but in places where the ground admits of stakes being driven, those shown in figs. 22 and 23 are preferable. Collectors of wood are unsuitable for such places, catching passing weeds, and becoming slimy and foul, and therefore useless.

Appropriate places for Cultivation.

The best places for cultivation are harbours, quiet bays, and estuaries of rivers. Exposed sea coast, though not the most desirable ground, may still be utilized where rocks or large stones abound, to which oysters can attach themselves, and from which

they obtain a certain amount of shelter. On such spots only the rough parcs shown at p. 24 can be used.

The first named places, however, give the most favourable chances of success. As a rule a gravelly or muddy bottom, that is to say, with a muddy surface, is most desirable. Sand, unless it has such a mixture of mud with it as prevents violent shifting, being less suitable. On the gravelly bottoms the best results will be obtained as regards breeding, the others are better for fattening, though upon hard mud banks and weed beds in France, parcs as already stated are formed at Arcachon and elsewhere. The engraving of one of the Imperial parcs at Arcachon (plate 4, Appendix), must here be again referred to. Shoals which are dry in estuaries, harbours, or sheltered bays *only* at low spring tides (but which are at all other times covered with water), are often found to be favourable both for breeding and fattening, and are utilized as noted above. Such are the shoals on which the Imperial parcs are established.

Foreshores which are also ebb-dry at low spring tides, and which are either gravelly or stony, can be used for parcs, more particularly if there is a bed of oysters anywhere in the neighbourhood. For fattening, however, there are few places better than a salt marsh, in which pools of salt water already exist. The fattening ponds (termed claires) at Marennes and La Tremblade, of which sketches are appended (see plates 7 and 8), are at both places formed out of salt marshes, and are in many instances only old disused salterns, or salt pans, in which rough salt is made. Here oyster ponds and salterns are often mingled together in apparent confusion. A tidal creek or canal usually runs through the marsh which gives a fresh supply of salt-water to the ponds whenever it may be desired. In these claires the oysters grow and fatten rapidly. In some more rapidly than in others. The number of oysters laid down in claires is proportioned to the time it is intended that they should remain there. For as the food of the oyster is only limited, of course a small number will fatten more rapidly than a large one. The average distribution is about two or three to the square foot. These places chiefly produce the green oyster, the prejudice against which has been already noticed in this report—a more foolish prejudice, or one which it is more desirable to dispel, could hardly exist. The oysters thus gathered are of excellent flavour and quality. Indeed they are by far the best produced in France, and by the prejudice existing against these oysters in England, they shut out very extensive fattening grounds in the vast extent of salt marshes which abound around the coasts, which are now of comparatively little value, but could be most easily utilized, and which would be less liable to plunder and danger than beds in the sea.

We have frequently referred to muddy or marly bottoms as being most favourable to the growth of the oyster. The blue or London clay, known as marl in Ireland, is usually the foundation of those bottoms. An able report and analysis by Professor Sullivan, given in the Appendix H, deals more fully with this matter, and shows on what parts of the seaboard of Ireland soil of an analogous nature is to be found.

With respect to the point of the density of the water, it may be stated that at Hayling Island the rate of density which was found favourable to the adherence of the spat was about 27° hydrometer.

It might be difficult perhaps to lay down any law or exact scale as to the temperature required for a satisfactory spat, but probably when the water ranges from 62° to 72° by day, within those margins, the temperature will be found to be sufficiently favourable.

It will be noticed in the foregoing report that repetitions sometimes occur. These have been found indispensable from the form in which the report has been drawn up, owing to the desire of the Commissioners that each subject should, as far as possible, be made complete in itself, so as to afford clear and definite information.

Summary.

In concluding our report we desire to remark that the limited time and resources at our command for investigating a subject of so extensive a character and on which so much difference of opinion exists, has precluded us from giving more than a general account of the state of the oyster fisheries in the different places we visited and the causes which we consider have contributed to their decadence or the reverse. In the instances of artificial culture, whether as regards breeding or fattening, we made as close an investigation as circumstances would permit into the causes which led to success or failure.

The readiest answer that could be given to the question as to what conditions are most favourable for the production and growth of oysters would be to point to any prolific natural bank, and to detail all the circumstances, so far as ascertainable, connected with it as regarded depth, temperature, and density of water, nature of the soil, &c., &c.

We have, therefore, deemed it of the greatest importance to ascertain as accurately as possible every fact in connexion with natural oyster banks as well as artificial layings, especially in Ireland. With this object, through the co-operation of the Admiralty, we caused the temperature of the sea to be ascertained simultaneously at 32 points around the coast of the United Kingdom, directing that care should be taken that this should be done in the proximity of natural or artificial oyster fisheries. These investigations were also useful in showing the effect of the Gulf Stream on different parts of the coast.

With a view of determining the soils most favourable to the production and growth of oysters, we obtained specimens of earths forming the bottoms of various fisheries in France, England, and Ireland; and with respect to the latter country we also obtained some from localities where cultivation had not proved successful, in order to ascertain how far the nature of the ground might have influenced failure.

In the Appendix will be found a special report on the temperature of the sea by Professor Hennessy, which embodies the results obtained from the voluminous returns of the coast-guard and from France, from which the following conclusions may be drawn:—

(1.) The temperature of the sea on the coast of Ireland varies within narrower limits than on the coast of Great Britain and France, or, in other words, it is more equable throughout the year, and also throughout the season of oyster breeding.

(2.) During the summer months, especially on the south and west coasts of Ireland, the temperature at noon, and, therefore, *a fortiori* between two and three in the afternoon, is generally sufficiently high to fulfil the conditions as regards temperature required for the abundant production of healthy oyster spat. This conclusion is especially true for the months of July and August, and with high water about two or three hours afternoon.

(3.) The winter temperature of the sea on the Irish coast is such as to render the destruction of oyster beds from excessive cold a contingency that may be considered as never likely to occur.

(4.) The second of these conclusions applies equally to the greater part of the coast of Great Britain, and the third to its south and west coasts.

A reference to the Abstract of the Tables of Temperature shows that latitude most powerfully influences the temperature of the sea; next, the situation of the place according as it is on an eastern or western shore (this probably being the effect of the Gulf Stream); lastly, there are local conditions, such as the shelter afforded by surrounding mountains, deep bays, inlets, &c., which during the summer months tend to give to the waters of such places an exceptional degree of heat.

The general inference being that western coasts are less liable than the eastern to great variations, although there are but few places even on the eastern coasts where this variation is so great as to prevent oyster culture being successfully adopted.

However, it is to be noticed that there prevails throughout the whole series of tables a higher degree of warmth close to the shore in summer than at some distance at sea. This might be naturally expected from the greater influence of the sun upon the soil over which there is a relatively less depth of water in accordance with the remarks made by Professor Hennessy at the end of his report, p. 75.

By our desire Professor Hennessy also laid down on the map which accompanies this report (see plate 10, Appendix) various lines showing the distribution of temperature over Ireland and on the surface of the surrounding sea. We have also indicated on the same map the site of all the natural oyster banks as far as we were able to ascertain them. For this purpose the queries in Appendix I. were sent to the various coast-guard stations.

The analysis of the earths was intrusted to Professor Sullivan. His report will be found in the Appendix H.

We have arrived at the following conclusions from the important information afforded by it:—

1. As regards mineralogical constitution, the mud of oyster grounds, suitable both for reproduction and fattening, may be derived from almost any kind of rock.

2. As regards mechanical character, fruitful oyster mud may vary within very wide limits from almost pure sand to plastic clay. In the very sandy grounds there must, however, be always a suf-

ficient quantity of highly hydrated clay to render the sand adhesive and to preserve it from becoming a mere loose running mass. In the clayey grounds there must always be calcareous mud to make the clay porous and prevent it becoming too hard—clay marls with some intermixed sand being perhaps the best of all materials for oyster grounds.

Professor Sullivan also furnishes most valuable information as to the places on the seaboard where the bottom is composed of earth of an analogous character to that where oysters exist naturally, or where artificial cultivation has succeeded. He also gives an analysis of the earth in some places where failures have occurred.

The earth known as the London clay appears to be the soil peculiarly adapted for oysters. It may be well here to explain that the term "London clay" is employed in a general and in a special sense. In the former it is used as a collective name for a number of beds of the older tertiary formation, consisting of gravels and sands below and of clays above, occupying a large portion of Sussex, Essex, and Middlesex, and portions of Berks, Surrey, and Kent. In the special or more limited sense it is applied to the blueish or blackish clay, sometimes mixed with a greenish-coloured earth and white sand, which forms the upper parts of the beds just mentioned. London clay is plastic clay, not differing much in chemical composition from ordinary potters' clay. It is sometimes highly calcareous, so as to pass it into a marly clay, and, as at Harwich, into a regular calcareous rock. The river and shore muds formed from the London clay are, however, largely mingled with sand derived from the lower beds above mentioned and from the overlying sandy beds such as the silicious sands of Bagshot in Surrey and New Forest in Hampshire, &c. All fruitful oyster muds contain organic matter, always due in part to the presence of infusoriæ, and sometimes in part to small algæ or confervæ, remains of shell-fish and other marine creatures.

It will be seen in the report that this London clay is to be found in many places in the rivers and around the shores of Ireland.

We are, therefore, enabled to state that, both as regards temperature and soil, Ireland appears to be capable of a far greater amount of oyster production than is yielded at present.

There are, however, other conditions to be fulfilled the existence of which can only be ascertained by observation and experience.

We deem it incumbent on us to recommend the utmost caution with respect to all attempts at artificial cultivation, particularly as regards propagation. We have found fully ten instances of success in fattening for the one in the way of production. Experiments in the former are much more conveniently and inexpensively made than in the latter, more especially where the tank or enclosure system is attempted.

Before, therefore, enterprises of the latter kind are undertaken it should be carefully considered whether all the requirements which experience has pointed to as essential to success would be likely to be fulfilled, not the least important of which would be

the outlay, the extent of which is generally difficult to calculate, as considerable departures from the original plans would often be necessitated in the event of the experiment not proving at once successful of accomplishment. Foreshore cultivation such as is in satisfactory operation at Auray in Brittany, described at pages 17 and 23, would be found much less hazardous and easier of accomplishment and in other respects more desirable generally for Ireland.

There are many places bordering on rivers and also on the sea where enterprises of this kind might be profitably carried on.

As already observed, it is much to be regretted that the practice so extensively prevails of selling oysters of immature growth for exportation, there being so many places in Ireland which are suitable for growth and fattening. It is most unwise to dispose of oysters of a year or eighteen months old, often at as low a price as 10*s.* per thousand, when, by laying them up for a longer period, they would be vastly increased in value.

It is also to be regretted that no restrictions have been enforced against the continuous dredging of banks after they have commenced to show signs of exhaustion, as this would, in our opinion, have tended considerably to avert the great falling off in supply in several banks formerly productive.

We are far from concurring in the opinion put forward by some authorities that, owing to the wonderful productiveness of the oyster, if only a few be left upon a bank they are sufficient for its replenishment.

It must be borne in mind that not more than ten per cent breed annually, and that from the moment of its birth the oyster is subject to numerous dangers—amongst them it is liable to be killed by a sudden fall or rise of temperature, to be borne to situations where it cannot attach itself, to be devoured soon after birth by the vermin that await it at that stage, or, later on, to be smothered by mussels, or attacked by the star-fish, dog-whelk, and crab, besides suffering numerous perils from mud and sand.

The number that arrive at maturity must therefore be comparatively few. Indeed it is asserted that not a dozen on an average out of the vast quantity originally given birth to, and which is said to consist of from one to two millions, survive.

Although we have collected a large amount of information with respect to oyster produce in America and other countries, we found that there were some important points of difference as regarded the nature of the oyster, and the influences to which it was subject, as compared with those of the British Islands and France, we have therefore deemed it best to omit it.

We have already given the leading facts with regard to the best situations and circumstances for production and growth, as well as the modus operandi of artificial culture and we have now only to consider, with a view to arriving at some decision on the point, the facts and evidence already alluded to as regards the cause of the deterioration of the oyster fisheries.

A perfectly unanswerable case is that of the Bay of Granville, at one time possessed of a large accumulation of oysters, but now

over-run with vermin and covered with weed and filth. Where similar cases exist in Ireland, it might perhaps be well to allow certain powers hereafter mentioned to the Inspectors of Fisheries for the revival and conservation of the beds.

Nothing can better illustrate the extreme difficulty experienced in arriving at a decision as to the cause of the enormous falling off in the productiveness of the English Oyster Fisheries than the opposite opinions expressed by those whom it might be supposed were most competent to pronounce on them.

The Royal Commission appointed in 1862 to report on the Sea Fisheries of the kingdom, declare in the most positive manner that the decline in production proceeded from a failure in spat during certain years.

In their Report, page 105, they say:—

"That this decrease has not arisen from over-fishing, nor from any causes over which man has direct control, but from the very general failure of the spat, or young of the oyster, which appears during the years in question to have been destroyed soon after it was produced. A similar failure of the spat has frequently happened before, and probably will often happen again."

The Commissioners were so impressed with the idea that oyster grounds cannot be dredged out, that their recommendation goes to the extent of having no restrictions whatever, not even a close season.

Doubtless, their opinions influenced Parliament in passing the late Act for giving effect to the Convention with France, whereby the close season in the channel has been reduced to ten weeks, and the whole of the coasts of England and Wales left open to unrestricted dredging throughout the year.

But it is evident that where the principles thus enunciated by the Commissioners have been allowed to prevail both before and since that time, the supply of oysters has so greatly fallen off as almost to have ceased in some places; while, on the other hand, in those places where proper protection has been extended, either no falling off at all has been observed, or a positive increase has been the distinct result. These are facts that cannot be disputed, and the inference from them is plain. In 1862, when the Commissioners laid down their principle, native oysters were £2 8*s.* per bushel. They are now (eight years after) £10. If this is the fruit of following out such principles, is it not time to try what a reverse of this system may do for us? or will it be thought advisable to wait a few years longer until oysters are worth their weight in silver? Is it reasonable to suppose that nature should fail in one of its great principles of reproduction for eight or nine years in succession? The bulk both of evidence and facts which we have been able to collect, has been overwhelming in condemnation of over and reckless dredging.

There is yet another point on which some controversy exists, upon which it may be well to touch, and that is as to the necessity for dredging over some oyster grounds to keep them clear of mud, weeds, and vermin.

The advocates for the removal of all restrictions against continuous dredging, contend that during the close season much more injury is inflicted by allowing slob and weeds to accumulate, and the enemies of the oyster to prey unrestrainedly on them than any amount of dredging would accomplish. (See Commissioners' Report, Appendix K.)

Those in favour of a close season assert in answer, that if the constant operations of the dredger were so necessary for the preservation of oyster grounds, the extensive banks, some with layers upon layers of oysters many feet deep, never could have survived so long—subject as they were to be covered with mud, overrun with weeds, bored through by the whelk, or devoured by star-fish and crabs.

Both disputants are to a certain extent right.

The great ocean beds over which a dredge may never have passed until their discovery, appear to support the theory that such grounds could thrive without the aid of man; and on the other hand, the ruined state to which many natural banks have often been rapidly reduced, soon after their discovery by the dredgers, is again a strong fact in support of the evidence as to the mischief of overdredging.

But it sometimes occurs that when owing to this serious diminution of oysters, such banks have been nearly or altogether abandoned, they rapidly become ruined by the collection of mud, weeds, and vermin, proving the necessity of continuing the dredging for cleansing purposes.

The answer to both sides is plain; many banks, though not all, really require human care for their preservation. Under other circumstances, where neither weeds nor mud accumulate, vermin abound, owing to causes difficult to account for; generally where the scour is sufficient to keep the cultch in a clean state, no interference on the part of man is necessary.

It may be asked why, if at one period banks were productive without artificial aid they should afterwards require it. There are various reasons why this may be so which may carry more or less weight. The disturbance of the soil by dredging may render all around loose and more shifting, and thus weed or soil may more easily drift into the depression caused by the abstracted oysters, or the drift of mud, &c., may attract vermin in large numbers from a distance, even as the fisherman rakes the bottom to attract fish. Alterations of currents and storms may now and then occur. Indeed there *may be* many ways of accounting for it, but it may be taken for granted that the fact is so. The case of Granville, for example, is one in point.

Recommendations.

As the result of our inquiry, we beg to offer the following recommendations for your Excellency's consideration:—

1. That all regulations with regard to the close time around the Irish coast should be strictly maintained.

2. That the Inspectors of Irish fisheries should have power, whenever they determine to reserve a bank or any portion thereof from public dredging for the purpose of recovery, to make such arrangements as may seem desirable for keeping the restricted part free from weeds and vermin.

3. That there should be procurable at each coastguard station, at a small cost, general information as to oyster culture, and simple instructions as to the best modes of proceeding.

4. That the Inspectors be empowered to adopt such other means as they may deem necessary to afford information and instruction to those requiring it with respect to oyster culture.

5. That having unsizable oysters in possession in places where it is prohibited by any by-law to take oysters from any public beds under a certain size shall be *prima facie* evidence that such oysters were taken in places so prohibited; such regulation not to apply to private oyster grounds.

6. That facilities be afforded to the coast population to acquire the use of small portions of foreshore, or sea bottom, for oyster cultivation, and to obtain loans on satisfactory security for the preparation of same, and for the purchase of oysters, collectors, &c.

7. That landed proprietors desirous of cultivating oysters on the shores adjoining their lands, be empowered to avail themselves of the provisions of the Irish Land Improvement Acts, for the purpose of oyster cultivation.

Conclusion.

In conclusion we beg to state that, in addition to the personal investigation we made into the condition of the natural and artificial oyster fisheries of the United Kingdom and France, we carried out the direction we received as to consulting the best authorities on the subject.

Besides perusing everything procurable that has been written on the question, we had also personal conferences with nearly all the best authorities, and correspondence with others whom we did not find it practicable to meet.

Although we do not concur in the opinion put forward by some as to the extraordinary profits to be made from oyster cultivation, still we believe, if judiciously undertaken, and prudently and perseveringly carried out, that it is profitable and that there is very much to encourage enterprises of the kind.

Ireland undoubtedly possesses many advantages for this industry especially as regards foreshore cultivation, the fattening process at least being attended with little risk, and the results being often most remunerative.

When it is recollected that the consumption of oysters in England is said to reach in value over four millions of pounds sterling, with a largely increasing demand at even the present high prices, it can be understood what great room there is for the disposal of much more than the scarcely fifty thousand pounds worth produced on the Irish coast.

Ten times that amount would find a ready market at good prices in England and France.

Comparatively insignificant as the subject may appear, yet we beg to submit to your Excellency, that the successful promotion of the oyster fisheries of Ireland would be likely to be productive of very important advantages to the coast population.

Besides affording remunerative occupation, not likely to interfere with other employment, it might also be the means in many instances of enabling them to procure the appliances for pursuing sea fishing, and thus tend to promote that important but neglected and decaying industry.

We feel bound to express our obligation to the Government of His Majesty the Emperor of the French, especially to M. De Champeaux, and the officers under his department, and to M. Coste, for the great aid rendered us during our investigation in France. To the latter our thanks are particularly due for the valuable returns and other important information forwarded to us subsequently.

We have also to acknowledge the valuable co-operation of the Admiralty for the use of Her Majesty's steam Yacht *Vivid*, for proceeding round the coast of Ireland—an expedition most satisfactorily performed, owing to the very efficient assistance of Commander Sulivan, and for the directions given to the Coast-guard of the kingdom to carry out our instructions for ascertaining the temperature of the sea, an order most admirably executed.

We should also add that the scientific investigations so important in their character, entrusted to Professors Hennessy and Sullivan, have been most ably executed.

All which we respectfully certify to your Excellency under our hands.

Dated in London, June 22, 1870.

JOHN ALOYSIUS BLAKE.
FRANCIS FRANCIS.
GEORGE W. HART.
THOMAS FRANCIS BRADY.

APPENDIX.

APPENDIX A.

CONVENTION between HER MAJESTY and the EMPEROR OF THE FRENCH, relative to FISHERIES in the SEAS between GREAT BRITAIN and FRANCE.

ARTICLE III.

The arrangements of the present Convention shall apply beyond the fishery limits of both countries, as defined by the preceding articles, to the seas surrounding and adjoining Great Britain and Ireland, and adjoining the coasts of France between the frontiers of Belgium and Spain. The rules respecting oyster fishery shall, however, be observed only in the seas comprised within the limits hereinafter described.

ARTICLE X.

Fishing of all kinds, by whatever means and at all seasons, may be carried on in the seas lying beyond the fishery limits which have been fixed for the two countries, with the exception of that for oysters, as hereinafter expressed.

ARTICLE XI.

From the 16th of June to the 31st of August inclusive, fishing for oysters is prohibited outside the fishery limits which have been fixed for the two countries, between a line drawn from the North Foreland light to Dunkirk, and a line drawn from the Land's End to Ushant.

During the same period and in the same part of the channel, no boat shall have on board any oyster dredge, unless the same be tied up and sealed by the Customs authorities of one of the two countries in such a manner as to prevent its being made use of.

ARTICLE XXIV.

All infractions of the regulations concerning the placing of boats on the fishing ground, the distances to be observed between them, the prohibition of oyster fishing during a portion of the year, and concerning every other operation connected with the act of fishing, and more particularly concerning circumstances likely to cause damage, shall be taken cognizance of by the cruisers of either nation, whichever may be the nation to which the fishermen guilty of such infractions may belong.

ARTICLE XXIX.

In both countries the competent court or magistrate shall be empowered to condemn to a fine of at least eight shillings (ten francs), or to imprisonment for at least two days, persons who may infringe the regulations of the Convention concerning—

1. The close season for oysters, and illegal possession of dredges on board during that season; &c.

ARTICLE XXX.

In all cases of assault committed or of damage or loss inflicted at sea by fishermen of either country upon fishermen of the other country, the courts of the country to which the offenders belong shall condemn the

latter to a fine of at least eight shillings (10 francs), or to imprisonment for at least two days. They may, moreover, condemn the offenders to pay adequate compensation for the injury.

ARTICLE XXXI.

Fishing boats of either of the two countries shall be admitted to sell their fish in such ports of the other country as may be designated for that purpose, on condition that they conform to the regulations mutually agreed upon. Those regulations, together with a list of the ports, are annexed to the present Convention; but without prejudice to the opening by either country of any additional ports.

ARTICLE XXXII.

The fishing boats of the one country shall not enter within the fishery limits fixed for the other country, except under the following circumstances:—

5. When proceeding to any of the ports of the other country open to them for the sale of fish in accordance with the preceding Article; but in such case they shall never have oyster dredges on board.

ARTICLE XXXIII.

When fishing boats, availing themselves of the privilege specified in Article XXXI., shall have oysters on board, they shall not carry any dredges or other implement for taking oysters.

At Paris, the 11th November, 1867.

(L.S.) LYONS.
(L.S.) MOUSTIER.

APPENDIX B.

DECREE.

Napoleon, by the grace of God and the national will, Emperor of the French,

To all present and to come, greeting.

Considering the law of the 9th January, 1852, on the coast fisheries;

Considering the decrees of the 4th July, 1853, and the 19th November, 1859;

Considering the recommendation of the permanent commission of fisheries,

On the report of our minister, the Secretary of State for the Marine and Colonies;

The Admiralty understood;

We have decreed and decree as follows:—

Art. 1. Fishing for all crustaceous and shell fish, except oysters, is permitted all the year, at a distance of three miles from low-water mark. Oyster dredging is permitted from the 1st September to the 30th April, on banks outside bays, or on banks situated three miles from the shore, with every description and tonnage of vessel.

Fishermen are called upon to observe, in the seas between the coasts of France and the United Kingdom of Great Britain and Ireland, the prescriptions of the convention of the 2nd August, 1839, and of the international rules of the 23rd June, 1843.

Art. 8. The prefects maritime fix by rules the time of the close and open season for the oyster fishing on the beds within bays, and on those beds situated within three miles of the coast.

They will determine the banks that are to be dredged.

Fishing is not permitted between sunset and sunrise.

Without the express permission of the prefect maritime, in the interest of cleaning the beds, fishermen should immediately throw back into the sea, all sand, gravel, and fragments of shells, as well as all oysters under the authorized size.

Wherever any establishments exist, fit to receive small oysters, these latter may be placed there, instead of throwing them back on the beds.

Thirdly. All oysters less than five centimètres.

Art. 12. The prefects maritime determine by issuing regulations, all the police measures for order, and proper precaution to hinder all accidents, damages, robberies, collisions, &c., and to guarantee to the fishermen the free exercise of their calling.

Art. 13. All the orders of the prefects maritimes with reference to the coast fisheries are submitted to the Minister of the Marine and Colonies for his approval.

Art. 14. All, or any part of any decrees or rules, issued previous to these, which are contrary to the present decree, or any part thereof, are hereby repealed.

Given at the Palace of the Tuileries this 10th day of May, 1862.

(Signed) NAPOLEON.

By the Emperor.

The Minister Secretary of State for the Marine and the Colonies,

(Signed) C^mte. P. DE CHASSELOUP-LAUBAT.

Enclosure No. 3.

4th Arrondissement Maritime. Year 1865.

IMPERIAL MARINE.

ORDER for the closing of the oyster fishery in the quarter of La Teste.

The Vice-Admiral, Prefect Maritime,

Considering the law of the 9th January, 1852, on the coast fisheries ;

Considering the decrees of the 4th July, 1855, and the 10th May, 1862 ;

Considering the prefectoral decree of the 15th October, 1864, opening the close season for oysters in the Bay of Arcachon ;

Whereas, fishing has been carried on at the places and on the days named by the prefectoral orders herewith ;

Considering the report of the local Commission which originated with the visit to the oyster beds ;

Considering the proposition of M. le Commissioner-General, chief of the marine service at Bordeaux ;

ORDER.

Art. 1. The taking of oysters in the Bay of Arcachon is, and remains prohibited from this date.

Art. 2. The Commissioner-General, chief of the marine service at Bordeaux, is charged with publishing this order, and posting it wherever necessary.

E. LARRIEU.

Rochefort, the 2nd February, 1865.

Port of Rochefort. 4th Maritime District.

IMPERIAL MARINE.

ORDER relative to the taking of oysters in the quarter of La Teste. (Basin of Arcachon.)

The Vice-Admiral, Maritime Prefect,

Considering the law of the 9th January, 1852, on the coast fisheries;

Considering the decrees of the 4th July, 1853, and of the 10th May, 1862;

Considering the report of the Commission which originated upon the visit to the oyster beds in the Bay of Arcachon, conformably to the 73rd article of the decree of the 4th July, 1853;

ORDER.

Art. 1. The taking of oysters in the Bay of Arcachon, during the summer 1865–6, will be confined to the portions hereafter more clearly pointed out.

1*st. Dredging for Oysters.*

From the 1st December to the 28th February :—

In the *trou du Sud* and in the channels of Eyrac, Teychan, in the current of Cousse, Andernos, Germanau, Arés, Ville Girouasse, Lanton, and Certes.

2*nd. Fishing on the Foreshore.*

The 4th December :—

1st. On the zone of the island, with the exception of the port of the island, and that part of Courbay comprised between la Laque and the estuary of la Réousse.

2nd. On the sockets, Cés, the parts east and west, Jean de Guiraou and Biaou.

3rd. On le Bouc, the point of Maubinot and Comprian.

The 20, 21, 22, and 23 December, during the whole tide :—

1st. On the zone of the foreshores, comprised between the downs of the *grand coin*, and the channel of Lège, for the space, outside the depôts of oysters.

2nd. On the zone of the foreshores, bounded on the west, north-west, and North, by a right line joining the west point of Aram to the point of Mapouchette, and continued by the channels of Cousse, of Mouchtaletto or Girouasse, the said zone comprising, with the exception of the point of Comprian, Gravier de Carguefond, the flats of Tés, Moussettes, Grahudes, Garèche, and Comprian, as well as the borders of the channel of Gujan.

Art. 2. The taking of oysters is forbidden :—

1st. In the channels of Comprian or Labrugèze and Gujan.

2nd. On the foreshores hereafter named, viz. :—

That portion of Courbay, between la Laque and la Réousse. The port of the island, for the part situated between the park of Crastorbe and the depôt No. 2, Germanau, Germanau, les Argiles, Graouères, Hautbelle, the sand of Carguefond, and the land of Guian.

Art. 3. Wooden rakes are permitted for the purpose of fishing on the foreshores.

Art. 4. It is forbidden, before fishing, to visit the oyster beds, for the purpose of work.

Nobody will be allowed on the foreshore without skates.

Art. 5. On condition of an inscription on the back of the list of embarkation á mée, the taking of oysters will be permitted—

1st. By the fishermens' wives.

2nd. By their sons, not sailors, under fifteen years of age.

3rd. By their unmarried daughters.

4th. And lastly, by the widows of sailors.

For this purpose the skippers (patrons), who intend to embark their wives and children, should, before fishing commences, make a declaration to that effect, viz. :—

To the patrons of the syndicat of la Teste—at the office of the Maritime Inscription.

The patrons of Gujan, Meyran, and La Ruade—at the residence of the *garde maritime* at Gujan.

The patrons of Mestras—at the syndicat of the sailors at Mestras.

The patrons of Audenge, Lanton, and Biganos—at the syndicat of the sailors at Arés.

Art. 6. The taking of oysters is forbidden between sunset and sunrise.

At the places where it should be exercised on the 4th December, fishing will only commence when the signal has been given either by the officers, or *agents de surveillance* ("caretakers"), (inspectors of fishing, syndics of the sailors, marine officers, and *gardes maritimes*), present on the spot, by means of the national flag hoisted to the mast of their embarkation.

The fishing will cease as soon as the flag has been hauled down.

On other days and places, the duration of the fishing will be in conformity with the terms of the present order.

Art. 7. Any infraction of the present order will be made amenable to, and be punished by, articles 7, 8, and 9, of the law of the 9th January, 1852.

Art. 8. The present order will be published and posted conformably to article 77 of the decree of the 4th July, 1853, by the Commissioner General, Chief of the Marine Service at Bordeaux.

E. Larrieu.

Rochefort, the 23rd November, 1865.

Office of the Minister of Marine and the Colonies.

The Minister of the Marine and the Colonies to the Prefects Maritimes.

(2nd Direction : Personnel, 3rd Office : Fishing and Marine domains.)

Paris, 22nd May, 1865.

Communication of a Note with reference to the Working of Oyster Beds.

Sir,

The information concerning the oyster fisheries, centralized for several years at the office of the minister, have enabled me to reproduce in a note at the end of the present circular, the principles which should guide the administration in the preparation of the orders to intervene in execution of the 8th article of the decree of the 10th May, 1862. This note, compiled, with the advice of the permanent commission of fisheries and maritime domains, contains suggestions which I specially recommend to your attention. They are the result of experience, and their application, by assuring a reasonable working of the

oyster beds, will, in consequence favour the development of the oyster industry to the profit of the fishermen, and the public supply of food.

To-day, when it has been shown that the small oysters develop more rapidly in parks than on the beds, it is well to make the fishermen aware of the advantage that would accrue to them, by the formation of establishments, where they could place these small oysters, upon their return from fishing. These establishments, of which the utility cannot be overlooked, are, in effect, the necessary object of the means granted to the fishermen to dispose of their small oysters, instead of throwing them back on the banks.

The Administration will then, if needful, lend its aid to the fishermen, to point out places suitable for the formation of such parks. It will also assist them in the drawing up of the applications which they will have to present, and the making of the plans which must accompany these applications, in the terms of the decree of the 10th November, 1862.

I request you may be good enough to submit to me, for this end, any propositions, the adoption of which may appear useful to you. The application of the terms of the subjoined note may, doubtless, be contrary to old customs of certain localities; notably, as regards the time for the fishing to commence. Also, it is necessary for the agents of the marine, who are in daily contact with the fishermen, to impress upon them as forcibly as possible, that it is in their interest that beds that are not sufficiently stocked, are not permitted to be worked; and that in shortening the time of opening certain beds for fishing, a greater means of wealth is prepared, of which they alone will profit.

However, these rules can only be applied in a certain measure; as expedient as they are, we must manage to make them suitable to the usages of the river population, until they are entirely enlightened. It is for this motive that the words "*as far as possible*" have been introduced in section 2 of the before-mentioned note (the end of January, for example), when the young oysters have acquired consistence enough to resist the action of the drag or dredge.

Receive, sir, &c.

The Minister Secretary of State for the Marine and Colonies,

(Signed), P. De Chasseloup-Laubat.

Enclosure.

Note on the Dredging of Oyster Beds.

1. Classed oyster beds, namely, those capable of being cultivated (dredged) from boats, sometimes bare in the whole or in part, their limits should be entirely fixed on all sides, by straight lines, buoys, poles, or in some manner or another. The marking of these limits ought to be arranged so as to permit of an efficacious surveillance.

2. Classed oyster beds, ought only, *as far as possible*, be dredged towards the end of January, namely, when the young oysters will have attained a sufficient amount of consistency to be able to resist the action of the dredge.

3. The time for the opening of the beds ought alone be mentioned in the prefectoral orders, that of the shutting being naturally dependent on the state of the bed, with regard to the quantity of oysters

to be preserved on it, for the purpose of restocking it, and the agents appointed to watch over the beds having besides power to stop the fishing, pending the promulgation of the order for stopping the fishing.

4. The prefectoral orders ought only to contain the names of the beds where fishing is allowed, it being useless to mention those on which it is forbidden.

5. When an oyster bed is found to be very productive, a portion (either one-fourth or one-fifth of the whole area) should be reserved from fishing as a fund for reproduction. This part should be marked off with buoys, and dredging should be forbidden there.

6. A vessel, or shore-boat, for guarding the fishing *should, as far as possible,* take part in the dredging of an open oyster bed.

7. No period of intermittence should be fixed for the dredging of an open oyster bed; the number of oysters that each fishing boat can take should not be determined; the number of boats of the quarter that can take part in the fishing each day should only be limited for the sake of order, and the carrying out of police regulations.

8. The small oysters taken in the fishing in the territorial sea, or by fishing on foot, can be placed in the establishments on the banks, and transported from the regular parks to ponds, claires, &c. Those that possess them can, in fact, dispose of them for their own interest.

9. During the dredging of a productive bed, all shells, gravel, stones, &c., should be thrown back on the bottom. All mud, sand, or vegetable matter, and all other hurtful matters or animals, should, on the contrary, be taken up with care, and kept in the boat, to be placed on sites for that purpose on the shore.

10. The dredging of all oyster beds incumbered with any matter or thing disadvantageous to the growth, or attaching of the spat, should be allowed until the bed is clean, nothing taken up being allowed to be returned.

11. The dredging of oyster beds of *agglomeration*, that is to say, where there is never any production of spat, should be allowed from the commencement to the end of the fishing season.

12. The oyster beds, after being dredged, should be visited with care, and such means of collecting the spat, as the water cannot carry away, should be laid down, such as broken pottery, stones, clean cultch, &c.

13. Classed oyster beds should be well watched during all the time that the fishing is not allowed there. This surveillance should be exercised by the Fishery Inspectors and the fishermen themselves.

14. Whenever a classed oyster bed is wholly bare, it should be well watched, so that poaching cannot take place.

15. *Gathering* oysters is authorized at all times, on all parts of the strand, beyond the limits of classed oyster beds, as well as the reserves created on the shore, or on private beds. It is only allowed on the classed beds, when they are open to dredging.

16. Those portions of the shore situated beyond the classed beds, and which after the inquiries ordained by the decree of the 10th November, 1862, are recognised as being capable of being granted to private individuals, without any public rights, can be allotted to persons (either fishermen or others) who apply for them, for the purpose of creating parks, for the taking of spat, depots for small oysters, or claires, or ponds, with a view to bettering the fish.

17. The necessary permission can only be granted on the legal conditions of revocability and danger, attached to concessions of the sort given on the public maritime property.

18. It is especially recommended to maritime authorities called upon

to grant these applications, to take care to leave every facility to the inhabitants of the shores to have access to the sea, so that they may not be deprived of the right of reaping what the waves carry there.

The Minister Secretary of State for the Marine and Colonies.

(Signed) P. De Chasseloup-Laubat.

Enclosure No. 5.

Ministry of the Marine and Colonies.

Report to the Emperor.

Sire,

For some time past numerous applications for grants of land for the formation of oyster beds, and for other deposits for shell-fish, on the sea coast, have been made to the Department of the Marine.

Although always revocable, the authorization to create private establishments on the public maritime domain would have, in certain cases, for a consequence, if they multiplied, the prevention in some sort, of free access to the shore, by the population who find means of subsistence in gathering whatever the sea throws up; lastly, it would hinder, paralyse even, fishing on a productive and important domain. The population on the shore have thus a great interest in knowing the applications for grants made to the superior administration, and it also should wish to be informed of the rights and interests to be conciliated, since it has to call for and hear them.

It is for the attainment of this end, that having taken the advice of the permanent commission on fisheries and maritime domains, I venture to submit for the approbation of the Emperor, a draft of a decree, of which the object will be to submit all the applications to an examination, prompt, without doubt, but regular, in which all interests may present themselves.

From the date of this decree, the applications will be submitted to an open inquiry for fifteen days in the commune of the territory.

The observations to which these applications will give rise will be received by the maritime authorities, and to prevent all local interest, not only the maritime authorities, but the mayors of communes, also those persons interested, will be able to address their observations directly to the prefects maritime, who will transmit the papers of the inquiry to the minister with their own suggestions. The maritime prefects will, besides, be able to know the real state of things, either by agents placed on the spot, or by the chief of the division of the shore.

Lastly, as has taken place since the decree of the 20th March, 1861, these applications will be submitted to the commission on fisheries, who fills with so much zeal the double mission of assisting the development of the means of production placed in the hands of private industry, and to watch over and keep for the shore population and for the fishermen the enjoyment of the public maritime domain.

I hope, Sire, that the decree I have the honour to submit to Your Majesty will thus give all the guarantees desirable to the different interests that it behoves us to protect.

I am, with the most profound respect, Sire, Your Majesty's very humble obedient servant and faithful subject,

The Minister Secretary of State for the Marine and Colonies,

(Signed,) C^te. P. De Chasseloup-Laubat.

DECREE.

Napoleon, by the grace of God and the national will, Emperor of the French,

To all present and to come, greeting.

On the report of the Minister of the Marine and Colonies,

Considering the advice of the Permanent Commission of Fisheries and the Maritime Domain,

Have decreed and decree as follows:

Art. 1. Every application for authority to form beds or claires for oysters, as well as for permanent depots for shell-fish, on a part of the maritime domain, should be accompanied by a plan detailing the works to be constructed and a plan of the shore, shown on the marine map of the locality, so as to make the situation of the park or depot known.

Art. 4. These applications are to be always submitted to an inquiry in the commune of the territory, during fifteen days, together with a notice of such application to be posted in the locality.

Art. 5. The posting of the notices, after being viséd by the commissioner of the quarter, is to be done at the expense of the applicant.

The mayors of communes can, in the delay of article 4, transmit to the maritime authorities the observations and objections which might be addressed to them.

Art. 6. The official report of the inquiry, containing the different evidence, to which is added the documents mentioned in article 1, as well as all the notes of the inquiry, is to be transmitted to the Maritime Prefect, who forwards it to the minister with his suggestions thereon.

The Prefect Maritime also transmits to the minister all the observations or objections that he will have received directly on the subject of the demands submitted to the inquiry.

Art. 7. All the above mentioned formalities will be dispensed with as regards the applications already granted in the substitution of grants of parks or claires which have been conceded conformably to the preceding rules.

Art. 8. The Minister of the Marine and Colonies is charged to have this decree carried out.

Given at the Palace of Compiègne, 10th November, 1862.

Signed NAPOLEON.

By the Emperor:

The Minister Secretary of State for the Marine and Colonies,

Signed C^te. P. DE CHASSELOUP-LAUBAT.

Enclosure No. 6.

MINISTRY OF THE MARINE AND THE COLONIES.

The Admiral, Minister Secretary of State in the Department of the Marine and the Colonies;

Considering the article 2 of the decree of 9th January, 1852;

Considering the decree of the 4th July, 1853, on the exercise of the coast fishery in the maritime division;

Considering the decree of 10th November, 1862;

Considering the application of the person interested and the plan annexed hereto;

Considering the official report of the inquiry held conformably to the above-mentioned decree of 10th November, 1862 ;

Considering the report of the ordinary engineer of the bridges and ways at , dated , viséd and adopted on by the chief engineer at

Considering, with the state of the suggestion that accompanies it, the report of the Commissioner of the Maritime Inscription at , dated

Considering the letter of the General Commissioner of Marine at , dated

Considering the recommendation of the Commandant-in-Chief of the Naval Division at , dated

Considering the letter of the Prefect Maritime at , dated

Considering the recommendation of the Permanent Commission on Fisheries and Maritime domains ;

ORDER.

Mr. , living at , is authorized to establish at (quarter of), an oyster park of a form, being long, by broad.

Article 2.

The licensee will only employ, as far as possible, for the surveillance and working of his beds, recorded fishermen, or the wives, children, mothers, or unmarried sisters of registered sailors.

APPENDIX C.

Number of parks and beds situated in the Bay of Cancale. Surface occupied by these establishments :—

24 parks, measuring	3	hectares,	48	ares.
1,173 beds, ,,	60	,,	0	,,

STATISTICS of the production of fishing in the Bay of Cancale each year, from 1800 to 1867 inclusive—

OYSTERS.

Period of the naval war.—Fishing, on our coasts was very much neglected, on account of so many of the fishermen being required for the navy, and also on account of the trouble caused by the enemy's cruisers. During this time of forced relaxation from fishing, the beds became so thickly stocked that in some places the oysters were a yard deep.

Number of oysters taken in . .	1800	–	1,200,000
,, ,,	1801	–	1,500,000
,, ,,	1802	–	1,300,000
,, ,,	1803	–	900,000
,, ,,	1804	–	1,400,000
,, ,,	1805	–	800,000
,, ,,	1806	–	500,000
,, ,,	1807	–	1,090,000
,, ,,	1808	–	1,800,000
,, ,,	1809	–	1,200,000
,, ,,	1810	–	700,000
,, ,,	1811	–	1,130,000
,, ,,	1812	–	1,100,000
,, ,,	1813	–	600,000
,, ,,	1814	–	400,000
,, ,,	1815	–	800,000
,, ,,	1816	–	2,400,000

The information of the production for the period from 1800 to 1816, very probably does not represent the exact quantity, as we have no statistics of that time, the figures given being deduced from questions asked to the old fishermen who fished during the time of the maritime war.

	Number of oysters taken in . .	1817 –	5,600,000
	,, ,,	1818 –	5,300,000
	,, ,,	1819 –	6,800,000
	,, ,,	1820 –	6,700,000
	,, ,,	1821 –	6,000,000
	,, ,,	1822 –	11,800,000
	,, ,,	1823 –	18,000,000
	,, ,,	1824 –	20,000,000
	,, ,,	1825 –	20,000,000
	,, ,,	1826 –	25,000,000
	,, ,,	1827 –	28,000,000
	,, ,,	1828 –	33,000,000
	,, ,,	1829 –	31,000,000
	,, ,,	1830 –	36,000,000
	,, ,,	1831 –	42,000,000
	,, ,,	1832 –	38,000,000
	,, ,,	1833 –	41,000,000
Time of the oyster riches. — People lived on the accumulated productions during the war. The number of dredging vessels is increasing each year.	,, ,,	1834 –	46,000,000
	,, ,,	1835 –	43,000,000
	,, ,,	1836 –	40,000,000
	,, ,,	1837 –	36,000,000
	,, ,,	1838 –	44,000,000
	,, ,,	1839 –	42,000,000
	,, ,,	1840 –	52,000,000
	,, ,,	1841 –	56,000,000
	,, ,,	1842 –	63,000,000
	,, ,,	1843 –	70,000,000
	,, ,,	1844 –	67,000,000
	,, ,,	1845 –	67,000,000
	,, ,,	1846 –	65,000,000
	,, ,,	1847 –	71,000,000
	,, ,,	1848 –	60,000,000
	,, ,,	1849 –	52,000,000
	,, ,,	1850 –	50,000,000
Decrease in the production, owing to over-dredging in the preceding years.	,, ,,	1851 –	47,000,000
	,, ,,	1852 –	20,000,000
	,, ,,	1853 –	49,000,000
	,, ,,	1854 –	20,000,000
	,, ,,	1855 –	20,000,000
	,, ,,	1856 –	18,000,000
	,, ,,	1857 –	19,000,000
	,, ,,	1858 –	24,000,000
	,, ,,	1859 –	16,000,000
Disappearance of oysters, owing to continued fishing; it is almost impossible to prevent this, as the people are in a suffering state, as they have no other resource.	,, ,,	1860 –	8,000,000
	,, ,,	1861 –	9,000,000
	,, ,,	1862 –	3,100,000
	,, ,,	1863 –	2,090,000
	,, ,,	1864 –	1,200,000
	,, ,,	1865 –	1,100,000
	,, ,,	1866 –	1,960,000
	,, ,,	1867 –	2,000,000
	,, ,,	1868 –	1,079,000

An almost complete wreck of the bottom, which can only be remedied by a total prohibition of fishing during several successive years.

APPENDIX D.

RETURNS of the JERSEY OYSTER FISHERY during the years 1855–1864.—Furnished by Captain John Amy, of Gorey, Inspector of Jersey Oyster Fishery.

—	Smacks and boats.	Men.	Tons.	No. of tubs of oysters caught.	Average price per tub.	Amount.
					s. d.	£ s. d.
From September 1st, 1855, to April 30th, 1856.						
Number of English dredging boats, . . .	99	577	1,686			
„ „ smacks employed carrying,	35	166	1,385			
„ Jersey dredging boats, . . .	86	457	1,499	179,194	3 10	34,345 10 4
„ „ open dredging boats, . .	22	44	51			
„ „ smacks employed carrying,	14	57	453			
Totals, ...	256	1,301	5,074	179,194	–	34,345 10 4
Freightage to vessels carrying oysters from Jersey to England, at 10*d.* per tub, . .	–	–	–	–	–	7,003 18 4
	–	–	–	–	–	41,349 8 8
From September 1st, 1856, to April 30th, 1857.						
Number of English dredging boats, . . .	97	597	1,554			
„ „ smacks employed carrying,	28	122	1,070			
„ Jersey dredging boats, . . .	94	526	1,675	179,690	4 1¾	37,248 5 0
„ „ open dredging boats, . .	25	56	50			
„ „ smacks employed carrying,	17	68	546			
Totals, ...	261	1,364	4,865	179,690	–	37,248 5 0
Freightage to vessels for carrying 163,690 tubs of oysters to England, at 10*d.* per tub, . .	–	–	–	–	–	7,161 8 9
	–	–	–	–	–	44,409 13 9
From September 1st, 1857, to April 30th, 1858.						
Number of English dredging boats, . . .	68	396	1,084			
„ „ smacks employed carrying,	24	114	1,104			
„ Jersey dredging boats, . . .	97	598	1,770			
„ „ open dredging boats, . .	20	40	50	150,990	3 11¼	29,726 3 6
„ „ smacks employed carrying,	15	62	531			
„ French smacks „ „	2	11	56			
Totals, ...	226	1,221	4,595	150,990	–	29,726 3 6
Freightage to vessels for carrying 129,490 tubs of oysters to England, at 10*d.* per tub, . .	–	–	–	–	–	5,665 3 9
	–	–	–	150,990	–	35,391 7 3
From September 1st, 1858, to April 30th, 1859.						
Number of English dredging boats, . . .	54	317	814			
„ Jersey „ . .	92	545	1,691			
„ „ open dredging boats, . .	14	35	38	120,610	4 3¼	25,755 5 2½
„ English smacks employed carrying,	18	82	778			
„ Jersey „ „	11	50	378			
Totals, ...	189	1,029	3,699	120,610	–	25,755 5 2½
Freightage to vessels for carrying 98,814 tubs oysters from Jersey to England, at 10*d.* per tub, ...	–	–	–	–	–	4,322 18 9
	–	–	–	–	–	30,078 3 11½

RETURNS of the JERSEY OYSTER FISHERY during the years 1855–1864—*continued*.

—	Smacks and boats.	Men.	Tons.	No. of tubs of oysters caught.	Average price per tub.	Amount.
From September 1st, 1859, to April 30th, 1860.					*s. d.*	£ *s. d.*
Number of English dredging boats,	27	154	407			
" Jersey "	99	588	1,848			
" " open dredging boats,	14	38	35	98,110	4 10	23,733 11 2
" English smacks employed carrying,	13	60	570			
" Jersey " "	12	48	370			
Totals,	165	888	3,230	98,110	–	23,733 11 2
Freightage to vessels for carrying 86,610 tubs oysters from Jersey to England, at 10*d.* per tub,	–	–	–	–	–	3,789 3 9
	–		–	–	–	27,522 14 11
From September 1st, 1860, to April 30th, 1861.						
Number of English dredging boats,	18	102	256			
" Jersey "	86	518	1,580			
" " open dredging boats,	17	43	60	76,380	4 9¾	18,371 5 0
" English smacks employed carrying,	10	48	429			
Jersey " "	10	40	318			
Totals,	141	751	2,643	76,380	–	18,371 5 0
Freightage to vessels for carrying 64,270 tubs oysters from Jersey to England, at 11*d.* per tub,	–	–	–	–	–	2,945 14 2
	–	–	–	–	–	21,316 19 2
From September 1st, 1861, to April 30th, 1862.						
Number of Jersey dredging cutters,	25	150	450			
" " open dredging boats,	14	35	42	18,220	4 9¾	4,383 14 0
" smacks employed carrying,	3	14	129			
Totals,	42	199	621	18,220*	–	4,383 14 0
Freight of 10,920 tubs of oysters exported to England, average freight per tub, 10*d.*,	–	–	–	–	–	477 15 0
	–	–	–	–	–	4,861 9 0
From September 1st, 1862, to April 30th, 1863.						
Number of Jersey dredging cutters,	8	45	112			
" Colchester "	14	84	162			
" Jersey open dredging boats,	21	42	50	9,841	6 1½	3,013 16 1½
" smacks employed carrying,	3	13	108			
Totals,	46	184	432	9,841†	–	3,013 16 1½
Freight of 3,120 tubs of oysters exported to England, average freight per tub, 12*d.*,	–	–	–	–	–	156 0 0
	–	–	–	–	–	3,169 16 1½
From September 1st, 1863, to April 30th, 1864.						
Number of Jersey dredging cutters,	8	48	120	6,196‡	6 3¾	1,955 12 0
" " open dredging boats,	15	45	35			

* About 3,500 tubs of the above were dredged in the British Channel and brought to Jersey by cutters dredging in the Channel. No English cutters came this season to dredge on our grounds.

† About 2,350 tubs of the above were dredged in the British Channel.

‡ About 3,280 tubs of the above were dredged in the British Channel and brought to Jersey by cutters working in the Channel. The oysters brought to Jersey from the Channel were for the manufactory established at Gorey for preserving oysters.

APPENDIX E.

Report on the Temperature of the Surface of the Sea on the Coasts of Great Britain and Ireland, and on the West Coast of France, by Henry Hennessy, F.R.S., Vice-President of the Royal Irish Academy.

I have examined the records of the observations on the temperature of the surface of the sea in deep and shallow water surrounding the British Islands, and off the west coast of France, made for the purpose of elucidating the physical conditions of the sea with reference to oyster culture, and I beg to submit to the Royal Commissioners the following report, which embodies the results I have obtained. These observations were made partly during the last three weeks of October, 1868, and partly during the last three weeks of May, and the months of June and July, 1869. Those taken on the British and Irish coasts were made by the coast-guards, and those on the French coast by officers and men attached to the department of fisheries, observers from whose character and habits accuracy might be fairly expected.

In order to draw correct conclusions as to the comparative conditions of temperature in different localities, we must be assured that the observations have been made at the same hours of local time, with similar precautions, and with instruments accurately corresponding in their construction. I have reason to believe that the two latter conditions were attended to, though I have no means of forming an independent judgment on the question, as I was not consulted when the observations were set on foot.

The hour of observation seems to have been uniformly about noon. Why this hour should have been selected I cannot understand, unless because it is the hour of maximum sunshine though not of maximum temperature for either air or water.* For determining the mean temperature of the sea observations made between 9 and 10, A.M., and between 9 and 10, P.M., would be more efficient, and maximum and minimum thermometers would have been the most suitable for ascertaining the highest and lowest temperatures. This is of less consequence, however, regarding the sea than the air, as the diurnal range of water temperature is small, on account of its peculiar thermal properties, whereby it slowly acquires and parts with heat. From the same causes the time of greatest water temperature occurs later both in the day and the year than the time of maximum air temperature.

As the hour of the day at which most of the observations were made during the last three weeks of October, 1868, is not distinctly mentioned, and as in some cases it seems to have greatly varied, I have been able to make use of the records of only a few stations in connexion with the general subject of the distribution of heat at the surface of the sea. The observations made during the summer months being directly connected with the important question of the conditions of temperature under which

* The weight of the results of the British and Irish observations is less than that of the French on account of the suspension of the former on Sundays, a circumstance which has possibly arisen from the coincidence of the hour of observation with that of public worship in England, and this furnishes an additional objection to the selection of noon whenever only one observation during the day can be made.

the reproduction of the oyster takes place, I proceed to their immediate discussion. As I am not perfectly sure of the correctness of the mode of taking these observations, and as some of them appear to be doubtful, it has occurred to me that the mean temperatures for the months at each station would be more useful as being more free from error than separate results,* and I have accordingly reduced the observations and tabulated them in the form herewith annexed. The southern and western stations of Ireland, as forming a special climatal group, are placed together; then the northern and eastern; next the southern and western stations of Great Britain, and then the northern and eastern. The Jersey results are grouped with the French in a separate table, and I give the latter in degrees of the centigrade and Fahrenheit scales.

Table I.

Table of Mean Summer Temperatures at Noon of the Sea and Air on the Coasts of Great Britain and Ireland.

	May.			June.			July.		
	At Sea.	Near Shore.	Air.	At Sea.	Near Shore.	Air.	At Sea.	Near Shore.	Air.
South and West Coasts of Ireland.	°	°	°	°	°	°	°	°	°
Tramore,	–	55·0	60·3	–	59·0	69·0	–	64·0	70·0
Crosshaven,	52·6	54·4	54·2	60·0	65·5	66·6	–	–	–
Kenmare,	54·0	–	57·0	57·0	–	61·0	66·0	–	68·3
Ballyheigue,	–	56·0	53·0	–	63·0	60·0	–	68·0	67·0
Ballyvaughan,	–	52·0	55·0	–	59·0	65·6	–	64·0	72·0
Pigeonpoint,†	–	53·0	54.0	–	60·7	62·0	–	65·0	67·5
Innisgowla,†	52·1	52·2	56·5	57·0	58·2	64·0	62·5	63·0	69·0
Innisiyre,†	–	53·0	55·5	–	58·0	64·0	–	63·0	74·0
Belmullet,	–	–	–	56·5	57·0	64·0	60·0	61·0	68·0
Pullendiva,	–	52·6	52·2	–	57·2	61·5	–	63·2	71·0
North and East Coasts of Ireland.									
Rathmullan,	–	50·0	51·5	–	58·5	60·0	–	69·0	71·0
Rutland,	–	49·9	51·6	–	55·3	58·4	–	63·1	64·4
Moville,‡	45·0	–	48·0	50·0	–	56·5	57·0	–	62·5
Carrickfergus,	–	50·0	52·0	–	56·0	59·0	–	62·0	65·0
Carlingford,‡	56·0	55·5	59·0	58·5	61·5	65·5	65·0	66·5	75·5
Howth,‡	–	50·0	51·0	52·5	52·3	60·0	55·3	56·5	68·1
Arklow,‡	–	–	–	51·0	51·2	62·0	59·9	52·8	72·2
South and West Coasts of Great Britain.									
Ramsgate,	55·0	56·0	60·5	57·7	58·7	69·8	62·3	63·0	77·7
Eastbourne,	53·0	53·2	60·0	57·5	58·0	65·1	63·4	64·3	73·1
St. Catherine's Point,	52·0	52·9	57·0	56·0	57·3	62·7	60·4	61·8	69·4
Goodwick,	–	52·5	57·5	–	57·1	63·0	–	62·0	68·4
Bangor,	–	51·5	57·0	–	57·1	61·4	–	62·5	68·7
Whitehaven,	49·8	50·6	55·6	56·0	56·0	61·5	61·7	62·5	67·4
Douglas (Man),	–	48·5	52·7	53·0	52·1	60·0	57·6	59·3	65·8
North and East Coasts of Great Britain.									
Stranraer,	–	51·5	58·8	–	54·7	63·4	–	57·6	65·3
Ardrossan,	–	47·9	56·4	–	54·6	61·6	–	63·1	64·4
Cromarty,	48·3	49·1	51·4	51·2	53·2	56·5	55·0	57·5	61·5
Lerwick,	47·5	48·6	50·5	50·1	51·1	56·5	52·0	53·6	60·0
N. Berwick,	47·0	48·2	51·4	51·5	52·0	58·2	55·9	57·2	66·5
Cromer,§	–	51·6	–	–	56·0	–	62·0	63·4	67·3

* These are given entire in Appendix N.
† These three Stations are in Clew Bay, and the results may be compared with Bunown in Table III.
‡ Doubtful.
§ During May and June the Air Temperatures are omitted, as neither Air or Water Temperatures were taken at noon.

Table II.

Table of Mean Temperatures of the Sea and Air at Noon on the West Coast of France.

(1.) *In Centigrade degrees.*

	May.			June.			July.		
	At Sea.	Near Shore.	Air.	At Sea.	Near Shore.	Air.	At Sea	Near Shore.	Air.
	°	°	°	°	°	°	°	°	°
St. Marc (Bay of Granville),	–	13·6	16·4	–	15·2	18·2	–	17·4	23·8
Gorvather (Bay of Trinité),	–	–	–	17·2	19·0	22·3	18·8	20·3	25·0
Arcachon, ...	–	17·0	23·9	–	19·3	24·6	–	21·8	29·0
Locqueltas (Auray River), .	16·0	16·1	18·3	17·0	17 5	22·2	20·5	21·3	26·5
On board the Congre, . .	–	–	–	17·0	19.0	–	20·5	22·2	–

The above Table, in Fahrenheit degrees, and including Jersey.

St. Marc, ...	–	56·4	61·6	–	59·0	64·7	–	63·4	74·8
Gorvather, ...	–	–	–	63·0	66·2	70·1	65·8	68·5	77·0
Arcachon, ...	–	62·6	75·0	–	66·7	78·3	–	71·2	84 2
Locqueltas, ...	60·8	61·0	64·9	62·6	63·5	72·0	68·9	70·3	79·7
On board the Congre, . .	–	–	–	62·6	66·2	–	68·9	72·0	–
Jersey, ...	–	–	–	58·3	–	68·3	63·3	–	73·8

It is immediately manifest that the highest sea temperatures were observed at the stations in the French group, and the lowest in the northern and eastern group of Great Britain. The sea temperature on the coast of Ireland seems upon the whole to have been a little above that on the coasts of England and Scotland. These results assist, moreover, in pointing out the cause of the comparative superiority of the Irish coast sea temperature. The temperature of the surface of the ocean at any point is due principally to the sum of all it gains from sunshine and warm currents, minus the sum of all its losses from radiation, evaporation, and cold currents. If the heat brought by warm currents should be considerable it may cause the mean temperature of the water to surpass that of the air above it, and at those times of the day when the air temperature is in excess of the sea temperature the difference between them is reduced in value. At noon in summer the air is usually warmer than the sea; we may conclude, therefore, that whichever group of stations shows the smallest difference between air and water temperature at noon is the group in which the influence of heat-bearing currents is most decided. The following table is constructed to show the application of this principle to the results under discussion :—

Table of Differences between Air and Sea Temperatures.

South and West Coasts of Ireland.

	May.	June.	July.
	°	°	°
Tramore, - - - -	+5·3	+10·0	+6·0
Crosshaven, - - - -	−0·2	1·1	–
Kenmare, - - - -	+3·0	4·0	4·3
Ballyheigue, - - -	−3·0	−3·0	−1·0
Ballyvaughan, - - -	+3·0	+6·6	+8·0
Pigeon Point, - - -	1·0	1·3	2·5
Innisgowla, - - - -	4·3	5·8	6·0
Innislyre, - - - -	2·5	6·0	11·0
Belmullet, - - - -	–	–	7·0
Pullendiva, - - - -	−0·4	4·3	7·8
Means, - - -	1·7	4·0	5·7

North and East Coasts of Ireland.

	°	°	°
Rutland,	+1·7	+3·1	+1·3
Rathmullan,	1·5	1·5	3·0
Carn (Moville),	3·0	6·5	5·5
Carrickfergus,	2·0	3·0	3·0
Carlingford,	3·5	4·0	10·0
Howth,	1·0	7·7	11·6
Arklow,	–	10·8 ?	12·3 ?
Means,	2·1	5·2	6·5
Means without Arklow,	2·1	4·3	5·6

Where the difference is prefixed by the negative sign — it shows that the temperature of the water was superior to that of the air; when there is no sign prefixed, or where it is positive, + it shows that the air was higher in temperature than the water.

South and West Coasts of Great Britain.

	May.	June.	July.
Ramsgate,	+4·5	+11·1	+11·7
Eastbourne,	6 8	7·1	8·8
St. Catherine's Point,	4·1	5·4	7·6
Goodwick,	5·0	5·9	6 4
Bangor,	5·5	4·3	6·2
Whitehaven,	5 0	5·5	4·9
Douglas (Man),	4·2	7·9	6·5
Means,	5·0	6·7	7·4

North and East Coasts of Great Britain.

Stranraer,	+7·3	8·7	7·7
Ardrossan,	8·5	7·0	5·5
Cromarty,	2·3	2·3	4·0
Lerwick,	1·9	5·4	6·4
N. Berwick,	3·2	6·2	9·3
Cromer,	–	–	3·9
Means,	4·4	5·9	6·1

West Coast of France.

St. Marc (Granville),	+5·2	+5·7	+11·4
Gorvather (Bay of Trinité),	–	–	–
Arcachon,	12·4	11·6	13·0
Locqueltas,	4·0	8·4	9·4
	–	10·0	10·5
Means,	7·2	8·0	10·5

On looking over these differences, and also the mean results for each geographical group of stations, it manifestly appears that the air and water temperatures differ least on the coasts of Ireland, and especially on its south and west coasts; and we may conclude, therefore, that on these coasts the ratio of the warming influence of thermal currents compared to that of direct sunshine is at its maximum. On the contrary, the comparative influence of sunshine seems to be greatest for the group of stations on the west coast of France.

The general conclusions which may be drawn from the observations under discussion are in harmony with the results previously obtained. Thus, in 1851 observations on sea temperature on the coast of Ireland, in connexion with a series of tidal and meteorological observations, were made under the superintendence of the Council of the Royal Irish

Academy. The Rev. Provost H. Lloyd has given the results regarding sea temperature in a memoir published in the Transactions of the Academy, and from these and other facts, to be presently quoted, I have been led to lay down the approximate annual isothermal lines for the water around the Irish coast. The most remarkable result established by these observations is, that the mean temperature of the ocean which washes the coast of Ireland surpasses the mean temperature of the air over the island, and I was thus led to rigorously deduce the general law that the representation of temperature distributing in Ireland must be made by isothermal lines, or lines of equal temperature, many of which must be re-entrant curves within the island. I subsequently extended the same conclusion to Great Britain, and showed that it was verified by the results of meteorological observations.* The red lines on the map which accompanies this report, show the distribution of temperature over the surface of Ireland in conformity with my deductions and with observation.

Mr. Nicholas Whitley has made a series of observations on the temperature of the sea on the coast of Cornwall, from which conclusions similar to those deduced from the Irish observations may be drawn. All of these results confirm the generally admitted opinion, that the coasts of the British Isles are bathed by water which has acquired a considerable amount of warmth from currents which are offshoots of the Gulf Stream. This great current splits into branches between the Azores and Newfoundland, and these branches carry their thermal influence to the western and northern coasts of Europe. The maximum temperature of the stream, as deduced from the most recent observations, is 88° within the Gulf of Mexico itself; it is 84° opposite Charleston, and moves with a velocity of from seventy to eighty miles per day. The line of demarcation between the stream and the cold water on the shores of America is well defined, so that, for instance, in May, 1851, on board the *Nile*, between Bermuda and Halifax, the water under the ship's stern was at 70°, while at the same moment, under the bow, the thermometer stood at 40°. This was on the N.N.W. edge of the stream. This sharpness of definition is gradually lost as the current approaches Europe, and its temperature also falls while its surface extends. Nevertheless, the offshoots emanating from it retain sufficient warmth to make its influence felt as far as the North Cape and Spitzbergen. Thus, at the North Cape, in latitude 71° 11′, the sea remains open all the year round, while in the Baltic the water is frequently frozen for many months. The warmth possessed by the waters bathing the coast of Ireland gives to it a representative character in physical geography, as exhibiting one of the best defined examples of an insular climate on the surface of the globe. This is in part a result arising from the superiority of water, as an agent for absorbing, retaining, and distributing solar heat, compared to the other materials of the earth's coating, as I pointed out several years since,† and which is now becoming very generally acknowledged by those who pay attention to the climatology of the globe. The effect of land under sunshine is to rapidly throw off the heat it receives into the upper regions of the atmosphere and the interplanetary spaces, both by day and night, and thus, although it causes a considerable increase of temperature in the stratum of air over it by day, it is not well adapted for storing up and retaining heat.

* "The Atlantis," vol. I., p. 396. "Philosophical Magazine," October, 1858, and "Proceedings of the Royal Society" for June, 1858.

† "Atlantis," vol. II., January, 1859. "American Journal of Science," May, 1859. "Phil. Mag.," vol. XVII., 4th Series.

Water is much more effective in this respect; the heat penetrates to a greater depth within it than on dry land, and it becomes more completely absorbed owing to the far higher capacity for heat of water, and the difference between its diathermanous action on the luminous heat rays entering it from the sun, compared with its action on the obscure rays quitting the particles in the interior of its mass. The incoming luminous rays penetrate freely to a moderate depth; the outgoing obscure rays are stopped almost altogether. These properties, combined with the mobility of water, as I have shown in the publications just quoted, fully account for the storing up of warmth in the tropical currents, and the retention of a considerable portion, which is ultimately given out for our benefit in the waters surrounding these islands.

The observations made in winter strikingly illustrate these conclusions, and they show that the occurrence of frost may be considered as impossible in the waters on the south and west coasts of Great Britain and Ireland. Mr. Whitley, in the essay already quoted, gives the results of observations on sea temperature, recorded in the logs of the Cunard mail steamers, and as their course for some distance beyond Cape Clear is nearly due west, the temperature recorded for 10° of west longitude may be considered as equivalent to that of the sea a little outside Crookhaven at the south-west extremity of Ireland. On this account, I include these facts in the annexed table with the numbers showing the sea and air temperatures determined on the coast of Ireland in 1851. As the temperature of the air was not taken at Bunown and Cushendall, the air temperatures observed at the two nearest stations respectively, namely, at Innisgort lighthouse, in Clew Bay, and at Portrush, may be referred to for comparison. It should be also borne in mind that these are not only mean temperatures (not like those taken at noon), but also that the sea temperatures in 1851 were observed in comparatively deep water, and never in shallows over banks close to the shore.

Table III.

Table of Mean Temperatures of the Sea and Air on the Coast of Ireland.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Mean for Year.
	°	°	°	°	°	°	°	°	°	°	°	°	°
In longitude 10° W., off Crookhaven, *Sea,*	51·0	50·0	51·0	52·0	53·0	57·0	59·0	59·0	58·0	55·0	53·0	52·0	54·2
Castletownsend, *Sea,*	47·1	46·6	46·8	49·7	53·5	56·3	60·3	61·3	60·3	54·8	49·2	48·6	52·9
Castletownsend, *Air,*	45·4	46·0	46·1	47·9	53·6	57·0	60·7	61·8	59·6	54·1	45·7	46·9	52·1
Bunown, . . *Sea,*	48·7	49·4	50·9	51·4	54·4	57·8	60·2	62·9	61·5	55·1	49·3	48·1	54·1
Innisgort, . . *Air,*	46·3	45·2	46·2	47·3	52·1	56·5	58·3	60·9	58·4	53·7	47·2	47·8	51·7
Courtown, . . *Sea,*	46·0	45·1	45·8	48·3	53·2	58·4	61·8	63·5	60·9	56·1	47·9	46·8	52·8
Courtown, . . *Air,*	43·3	43·8	44·3	46·6	52·5	57·3	59·5	60·7	56·5	51·8	41·6	45·1	50·3
Donaghadee, . . *Sea,*	46·5	45·6	45·6	48·1	50·3	52·5	55·8	57·4	57·5	54·7	50·1	49·3	51·1
Donaghadee, . . *Air,*	42·8	43·1	43·3	46·6	50·8	55·8	57·0	58·8	56·3	51·8	43·9	45·4	49·6
Cushendall, . *Sea,*	46·6	45·7	45·6	47·2	49·1	52·1	55·4	57·0	58·3	55·6	51·6	49·4	51·1
Portrush, . . *Air,*	42·0	42·3	42·9	45·7	50·2	55·3	5·65	58·8	55·5	51·3	44·4	44·7	49·1
Portrush, . . *Sea,*	46·9	45·6	45·7	47·9	50·6	54·3	57·5	58·7	58·7	54·9	49·6	47·8	51·5

Owing to the circumstance already alluded to at the commencement of this report, I have not made much use of the observations on the temperature of the sea in October, 1868, but as at the following stations the observations are stated to have been made at noon, except one, which I include on account of the air, temperature having been exceptionally observed, it appears desirable to compare the results with those contained in the foregoing table.

MEAN TEMPERATURE AT NOON IN OCTOBER, 1868.

	At sea.	Near shore.	Air.
	°	°	°
Ballyglass (Belmullet),	52·0	50	51·2
Carrickfergus,	50·0	48·8	–
Carlingford (Cranfield Point),	53·4	53·6	–
Filey (Yorkshire),	–	48·5	–
Ramsgate,	55·4	54·2	–

As these results are obtained from observations made during the last three weeks of October, they should be lower than the means derived from the whole month and intermediate between these and the results for November. Bearing this in mind, they may be considered as confirmatory of our general results, and especially of the superior temperature of the southern and western coasts of the British isles. They also show that the temperature of the sea in deep water during October is a little greater than near the shore, a circumstance that might be anticipated for the late autumn and winter months.

The blue lines on the map representing the distribution of mean annual temperature at the surface of the sea, are laid down partly from the results in Table III., and from indications in Maury's charts of ocean temperatures, published by the Government of the United States. The dotted lines along part of the coast in the same map represent the distribution of temperature at noon in July, deduced from the results in our first table.

It appears from Table III. that the mean temperature of the sea during the winter months was decidedly in excess of that of the air at the time when the observations were made, and this excess was maintained even in the mean annual temperatures, thus confirming the proposition already stated as to the important heating influence of currents derived from the Gulf Stream. The difference between the air and water temperatures, during the months of May, June, and July, in this table, may be instructively compared with the corresponding differences derived from the noon observations in 1869, as shown herewith.

TABLE OF DIFFERENCES OF MEAN TEMPERATURES OF AIR AND SEA.

	May.	June.	July.
	°	°	°
Castletownsend,	+0·1	+0·5	+0·4
Bunown,	—2·3	—1·3	—1·9
Courtown,	—0·7	—0·9	—2·3
Donaghadee,	+0·5	+3·3	+1·8
Cushendall,	+1·1	+3·2	+1·1
Portrush,	—0·2	+1·0	—1·0
Means,	—0·25	+1·0	—0·3

As before, the + signifies that the air was warmer than the water, and the sign — that water was warmer than the air. This table shows in a remarkable manner the influence of heat-bearing currents during the months when sunshine is most powerful.

As the object of the present inquiry is, the determination of the conditions of sea-water climate in connexion with the development of a cer-

tain class of organized beings, I may be permitted to mention that the peculiarities of the climate of Ireland, which arise from its atmosphere deriving a considerable amount of warmth and moisture from the surrounding seas, have been referred to in order to explain the existence of a remarkable class of perennial plants found along the western and south-western shores of the island.* The plants in question belong chiefly to the family of heaths, and grow abundantly on the northern coast of Spain, and they are scattered along the east shores of the Bay of Biscay up to some of the localities on the west coast of France, where the observations whose results are given in Table II. had been made. A few of them have been also found very sparingly at the south-western extremity of Cornwall, but not in other portions of Great Britain. Mild and humid winters are the most important conditions required for this flora, and it would be impossible to point to a better illustration of the influence of the comparatively warm sea water beating against the western coast of Ireland, than the existence of these South European plants in a latitude so much to the north of their usual position, as that of the counties of Galway and Mayo.

The superior temperature of the sea in deep water, as compared to shallow water, in the month of October, is explained by the decrease of sunshine while the action of warm currents continues unabated. On the other hand, the superior temperature of the inshore water during the summer months, as disclosed by Tables I. and II., results from the greater influence of the sun during these months.

In summer, when the tide retires from shallow bays, a large extent of beach becomes frequently exposed to the mid-day sun, and this rapidly absorbs the solar heat. As the water of the incoming tide overflows the heated surface it becomes sensibly warmed, and it may thus exhibit an exceptionally high temperature. The conditions most favourable to this result would arise on bright days in a shallow bay, surrounded by hills on the north and east, and with high water two or three hours after noon.

The following deductions may be fairly drawn from the facts and reasonings contained in this report:

1. The temperature of the sea on the coast of Ireland varies within narrower limits than on the coast of Great Britain, or, in other words, it is more equable throughout the year and also during the summer season, when oyster breeding takes place.

2. The temperature of the sea at noon on the Irish coast, especially on the south and west coasts during the months of June and July is, upon the whole, higher than on the coast of Great Britain, and less than on the west coast of France.

3. This temperature seems to be sufficient for the requirements of oyster breeding, and therefore, *a fortiori*, the temperature about two in the afternoon under the conditions above referred to.

4. The highest temperature of the seas surrounding Ireland, and probably also of those surrounding Great Britain, is during the month of August, and the least during the month of February.

5. Any advantages as to temperature possessed by the seas which wash the Irish coast are unquestionably due to the thermal influence of currents connected with the Gulf Stream.

*Proceedings of the Royal Irish Academy for May, 1867, and British Association's Report for 1868, trans. sections, p. 98.

OBSERVATIONS ON THE TEMPERATURE OF THE SEA.

NOTE.—The Temperature for column B to be taken on Oyster Banks, where such exist, but where there are no Oyster Beds, then the Temperature to be taken with the Thermometer 1 foot below the surface in shallow water near the shore. The Thermometer at sea to be lowered 6 feet below the surface and in not less than 3 fathom water.

GOREY, JERSEY.

Taken by JOHN AMY, Harbour-master.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Feet.			°		
28	–	54	Near the	18	Flowing	N E	59	2 p.m.	The temperature has been daily taken at the pierhead, and I believe it is about two degrees less on the oyster beds.
29	–	53	land.	18	Ebb	N E	55	10 a m.	
31	–	56	do.	20	do.	N	63	11 a.m.	
June.									
1	–	56	do.	30	Flowing	N E	62	11 a.m.	
2	–	58	do.	24	do.	NW	65	do.	
3	–	59	do.	20	Ebb	W	70	2 p.m.	
4	–	57	do.	28	do.	W	66	do.	
5	–	59	do.	28	High water	SW	69	do.	
7	–	59	do.	28	Flowing	N E	75	3 p.m.	
8	–	61	do.	30	do.	W	82	2 p.m.	
9	–	60	do.	28	do.	N E	76	3 p.m.	
10	–	58	do.	26	Ebb	E	68	10 a.m.	
11	–	58	do.	24	do.	N E	62	do.	
12	–	59	do.	28	do.	S E	64	do.	
14	–	58	do.	30	do.	W	67	do.	
15	–	56	do.	28	do.	W	63	11 a.m.	
16	–	57	do.	30	High water	NW	65	Noon	
17	56	58	do.	30	Flowing	W	65	11 a.m.	
18	–	58	do.	28	do.	SW	65	Noon	
19	–	58	do.	30	do.	WSW	66	1 p.m.	
21	–	58	do.	25	do.	W	66	2 p.m.	
22	–	58	do.	24	do.	Calm	68	3 p.m.	
23	–	60	do.	30	do.	SW	69	4 p.m.	
24	–	60	do.	24	do.	N	72	do.	
25	–	60	do.	20	do.	E	70	5 p.m.	
26	–	60	do.	28	Ebb	S E	65	10 a.m.	
28	–	60	do.	30	do.	E	69	11 a.m.	
29	58	60	do.	30	do.	E	68	10 a.m.	
30	–	58	do.	30	High water	N E	69	do.	

GOREY, JERSEY—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°		Feet.			°		
1	–	59	Near the	28	High water	N E	67	11 a.m.	
2	–	58	land.	28	do.	N E	65	Noon	
3	–	59	do.	26	Flowing	E	68	do.	
5	–	62	do.	24	do.	Calm	80	1 p.m.	
6	–	62	do.	24	do.	W	75	3 p.m.	
7	–	64	do.	28	do.	SW	72	do.	
8	–	62	do.	28	do.	W	70	do.	
9	–	63	do.	24	do.	Calm	75	4 p.m.	
10	–	62	do.	26	do.	W	73	do.	
12	–	62	do.	30	High water	N E	71	9 a.m.	
13	–	63	do.	30	Ebb	N E	72	10 a.m.	
14	–	63	do.	30	do.	N E	70	do.	
15	–	63	do.	28	do.	S	72	11 a.m.	
16	–	65	do.	28	Flowing	S E	77	do.	
17	–	66	do.	24	do.	E	79	Noon	
19	–	66	do.	26	do.	N E	77	1 p.m.	
20	–	65	do.	28	do.	N E	75	2 p.m.	
21	–	65	do.	30	do.	E	79	3 p.m.	
22	–	66	do.	30	do.	SW	79	do.	
23	–	64	do.	30	do.	W	78	do.	
24	–	64	do.	28	Ebb	SW	70	9 a.m.	
26	–	64	do.	30	do.	SW	74	10 a.m.	
27	–	64	do.	28	do.	W	73	do.	
28	–	65	do.	28	do.	S	75	11 a.m.	
29	–	65	do.	28	do.	SW	73	do.	
30	–	64	do.	26	High water	W	74	do.	
31	–	65	do.	24	Ebb	W	76	Noon	

SOUTH YARMOUTH DIVISION.—ST. CATHERINE'S POINT STATION, ISLE OF WIGHT.

Taken by JOHN PEPPER, Chief Officer.

May.									
10	52	53	¼ mile	5 fathoms	Ebb	WSW	58	Noon	Ground sea.
11	52	53	½ mile	9 fathoms	do.	N E	58	do.	do.
12	52	54	do.	do.	do.	N E	59	do.	Smooth sea.
13	52	54	do.	do.	High water	E	56	do.	do.
14	52	53	do.	8 fathoms	Flood	E	54	do.	Rough sea.
15	52	52	do.	do.	do.	E	57	do.	Smooth sea.
17	52	52	¾ mile	10 fathoms	do.	S	58	do.	Ground sea.
18	–	52	5 yards	3 feet	do.	S W	59	do.	Impracticable.
19	–	52	3 yards	4 feet	do.	WSW	58	do.	do.
20	52	53	½ mile	8 fathoms	do.	W	64	do.	Rough sea.
21	52	53	do.	7 fathoms	do.	Var.	60	12 30 p.m.	Smooth sea.
22	53	53	do.	do.	Ebb	N N E	58	Noon	do.
24	46	47	do.	do.	do.	E S E	56	do.	do.
25	53	54	do.	8 fathoms	do.	E	56	do.	Ground sea.
26	54	55	do.	do.	do.	E	60	do.	do.
27	53	55	do.	do.	do.	E S E	58	do.	do.
28	52	53	do.	7 fathoms	High water	E N E	49	do.	Rough sea.
29	51	50	do.	do.	Flood	E N E	46	do.	do.
31	52	54	do.	8 fathoms	do.	N W	56	do.	Smooth sea.

SOUTH YARMOUTH DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	53	55	½ mile	8 fathoms	Flood	S S W	57	Noon	Smooth sea.
2	53	55	do.	7 fathoms	do.	W	60	do.	do.
3	53	55	¾ mile	do.	do.	W S W	60	do.	Ground sea.
4	54	55	do.	9 fathoms	do.	W S W	55	do.	Smooth sea.
5	54	54	½ mile	7 fathoms	Low water	S W	55	do.	Thick fog; smooth sea.
7	55	56	do.	do.	Ebb	S S E	72	do.	Smooth sea.
8	55	57	do.	do.	do.	N N W	70	do.	do.
9	55	57	do.	do.	do.	W	63	do.	do.
10	55	57	do.	8 fathoms	do.	N E	64	do.	do.
11	56	57	do.	7 fathoms	do.	S S W	60	do.	do.
12	56	57	do.	do.	do.	S	60	do.	do.
14	57	58	do.	do.	Flood	W N W	62	do.	Rough sea.
15	–	58	3 yards	3 feet	do.	W S W	63	do.	Impracticable.
16	–	58	do.	5 feet	do.	W N W	60	do.	do.
17	57	58	½ mile	7 fathoms	do.	N	56	do.	Smooth sea.
18	58	58	do.	do.	do.	N N W	55	do.	do.
19	58	58	do.	do.	do.	S S W	57	do.	do.
21	58	58	¾ mile	9 fathoms	Ebb	W	58	do.	Thermometer broken
22	–	–	–	–	–	–	–	do.	Smooth sea.
23	–	–	–	–	–	–	–	do.	do.
24	58	59	¾ mile	9 fathoms	Ebb	–	80	do.	do.
25	57	59	½ mile	7 fathoms	do.	S E	65	do.	do.
26	57	59	do.	do.	do.	N E	67	do.	do.
28	58	60	do.	do.	Flood	E S E	72	do.	do.
29	58	60	¼ mile	5 fathoms	do.	E S E	69	do.	do.
30	58	60	½ mile	7 fathoms	do.	N E	66	do.	do.
July.									
1	57	58	½ mile	7 fathoms	Flood	N E	62	Noon	Smooth sea.
2	57	59	do.	do.	do.	N E	63	do.	do.
3	57	59	do.	do.	do.	S E	62	do.	do.
5	58	60	do.	do.	Low water	W	62	do.	do.
6	59	60	¼ mile	5 fathoms	Ebb	W S W	63	do	Rough sea.
7	59	60	½ mile	7 fathoms	do.	S W	63	do.	do.
8	59	60	do.	do.	do.	S	65	do.	do.
9	60	61	¼ mile	5 fathoms	do.	W	65	do.	Ground sea.
10	60	62	½ mile	7 fathoms	do.	Var.	67	do.	do.
12	60	62	do.	do.	do.	S	74	do.	Smooth sea.
13	60	62	do.	do.	High water	N E	64	do.	do.
14	60	62	do.	do.	Flood	W S W	73	do.	do.
15	61	62	do.	do.	do.	S W	75	do.	do.
16	61	62	do.	do.	do.	–	77	do.	do.
17	61	63	¾ mile	10 fathoms	do.	S S E	77	do.	do.
19	62	64	½ mile	6 fathoms	do.	S S W	78	do.	do.
20	62	64	¾ mile	10 fathoms	Ebb	E N E	75	do.	do.
21	62	64	½ mile	7 fathoms	do.	E	68	do.	do.
22	62	64	do.	do.	do.	S S E	73	do.	Ground sea.
23	62	63	do.	do.	do.	W N W	76	do.	do.
24	63	64	do.	8 fathoms	do.	W	80	do.	do.
26	63	64	¼ mile	5 fathoms	High water	S W	70	do.	do.
27	63	64	½ mile	7 fathoms	Flood	W S W	68	do.	Rough sea.
28	63	63	do.	do.	do.	N E	64	do.	Smooth sea.
29	63	64	do.	do.	do.	W	70	do.	do.
30	–	64	5 yards	3 feet	do.	W	67	do.	Impracticable.
31	–	64	do.	do.	do.	W S W	68	do.	do.

Eastbourne Division.—Eastbourne Station, Sussex.

Taken by J. Henderson, Chief Officer.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	52	53	½ mile	3½ fathoms	Ebb	W	63	Noon	
11	51	52	do.	do.	do.	WNW	62	do.	
12	51	51	do.	do.	do.	N E	58	do.	
13	52	52	¼ mile	2½ fathoms	High water	E	57	do.	Unable to launch a boat; taken from Eastbourne Pier.
14	51	51	250 yards	2 fathoms	Flood	E	59	do.	
15	50	50	do.	do.	do.	E	57	12 50	
17	50	52	¾ mile	3½ fathoms	do.	SW	59	Noon	
18	53	54	250 yards	2 fathoms	Ebb	WSW	61	4 30 p.m.	
19	53	53	—	1¾ fathoms	Flood	SW	61	4 p.m.	
20	54	55	250 yards	2 fathoms	do.	W	60	5 15 p.m.	
21	54	53	1 mile	3 fathoms	Ebb	E S E	62	11 a.m.	
22	51	51	¾ mile	2¾ fathoms	do.	NW	55	do.	
24	55	56	½ mile	3 fathoms	do.	S	64	Noon	
25	56	56	¼ mile	3½ fathoms	High water	E	62	do.	
26	57	57	½ mile	3½ fathoms	—	SSW	67	do.	
27	57	57	do.	do.	—	E	64	do.	
28	55	55	250 yards	2¾ fathoms	—	E N E	51	do.	
29	52	52	—	2½ fathoms	Flood	N N E	51	do.	
31	53	54	¾ mile	3½ fathoms	do.	NNW	61	do.	
June.									
1	55	56	½ mile	3½ fathoms	Ebb	S	63	5 p.m.	
2	56	56	do.	do.	High water	NNW	65	do.	
3	56	56	do.	do.	do.	Var.	61	do.	
4	55	57	do.	3 fathoms	Flood	W	64	do.	
5	55	55	¾ mile	3¼ fathoms	Ebb	SSW	65	Noon	
7	57	59	1 mile	do.	do.	S	76	do.	
8	59	58	¾ mile	3½ fathoms	do.	N	75	1 p.m.	
9	59	61	½ mile	do.	do.	W	70	Noon	
10	59	60	do.	do.	High water	N E	67	do.	
11	59	59	do.	3¼ fathoms	do.	SW	66	do.	
12	58	59	1 mile	do.	do.	S	66	do.	
14	58	58	250 yards	3½ fathoms	Flood	NW	63	do.	
15	58	59	¾ mile	2¾ fathoms	High water	W	60	3 p.m.	
16	57	56	1 mile	5½ fathoms	do.	N	60	3 30 p.m	
17	57	57	¾ mile	do.	Flood	W	61	2 30 p.m.	
18	57	57	½ mile	3½ fathoms	do.	NW	63	4 p.m.	
19	57	58	1 mile	3¼ fathoms	do.	N	67	5 30 p.m.	
21	57	57	do.	do.	Ebb	SW	59	Noon	
22	57	57	¾ mile	do.	do.	W	58	do.	
23	58	58	½ mile	do.	High water	SSW	66	do.	
24	57	58	do.	3½ fathoms	do.	SSW	71	do.	
25	57	58	¾ mile	do.	do.	S E	69	do.	
26	58	59	do.	do.	Flood	E	71	do.	
28	60	61	½ mile	3 fathoms	do.	E N E	69	do.	
29	60	60	250 yards	do.	do.	E N E	64	do.	
30	61	61	do.	2½ fathoms	High water	E N E	68	4 p.m.	

EASTBOURNE DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	60	60	250 yards	2¼ fathoms	High water	N E	66	4 p.m.	
2	60	60	—	—	—	N E	65	5 p.m.	
3	60	61	½ mile	3¼ fathoms	Flood	E	67	4 p.m.	
5	61	62	⅝ mile	3 fathoms	Ebb	S W	75	Noon	
6	60	62	do.	do.	Flood	W S W	67	6 30 p.m.	
7	58	60	do.	3¼ fathoms	Ebb	W S W	71	Noon	
8	60	60	do.	3½ fathoms	High water	N W	76	do.	
9	60	61	1 mile	4 fathoms	do.	W	72	11 30 a.m.	
10	61	62	¾ mile	3½ fathoms	do.	S S W	74	Noon	
12	65	66	½ mile	3½ fathoms	do.	S E	78	do.	
13	64	65	do.	3¼ fathoms	do.	N E	68	1 30 p.m.	
14	64	65	1 mile	do.	Flood	W N W	72	11 30 a.m.	
15	63	64	½ mile	3½ fathoms	High water	N W	76	4 p.m.	
16	65	66	¾ mile	do.	do.	W	80	do.	
17	67	68	do.	do.	Flood	S S W	81	do.	
19	67	68	1 mile	3¼ fathoms	Ebb	S	81	Noon.	
20	67	67	⅝ mile	do.	do.	E	79	do.	
21	65	66	do.	3½ fathoms	do.	S E	66	do.	
22	66	67	do.	3¼ fathoms	do.	S	75	do.	
23	65	66	½ mile	do.	do.	W	72	do.	
24	65	66	1 mile	4⅓ fathoms	High water	N W	72	do.	
26	65	65	do.	3¼ fathoms	Flood	E	71	do.	
27	65	66	¾ mile	do.	do.	E	74	do.	
28	65	65	½ mile	do.	High water	S W	71	2 p.m.	
29	66	67	⅝ mile	3½ fathoms	Flood	W S W	75	Noon	
30	65	66	do.	3 fathoms	do.	W	71	do.	
31	65	66	do.	do.	do.	W	76	do.	

RAMSGATE DIVISION.—RAMSGATE STATION, KENT.

Taken by the Officer of Station.

May.			Yards.	Fathoms.					
10	54	56	500	3½	High water	W S W	60	Noon	
11	52	56	550	3¾	Flood	W	60	11 55 a.m.	
12	52	54	550	4	—	E by N	55	11 50 a.m.	
13	54	55	600	4	Flood	E by N	58	12 5 p.m.	
14	–	54	—	–	—	N E	58	11 55 a.m.	Heavy sea.
15	–	56	—	–	—	E	58	Noon	Impracticable.
17	53	58	600	3	Ebb	W	62	12 5 p.m.	
18	–	58	—	–	do.	S W	62	Noon	Heavy sea.
19	–	58	—	–	do.	S W	60	do.	Impracticable.
20	56	57	600	3	do.	W S W	61	do.	
21	56	57	600	3	do.	E	62	11 55 a.m.	
22	57	58	550	3	do.	N	64	Noon	
24	56	58	550	3	do.	S	64	do.	
25	56	58	550	3½	Flood	E	65	do.	
26	57	59	550	3¼	do.	E by S	66	do.	
27	52	54	550	3¾	do.	E by S	68	11 55 a.m.	
28	–	52	—	–	—	N E	55	Noon	Impracticable.
29	–	52	—	–	—	N E	54	do.	do.
31	54	55	600	3	Flood	N W	55	12 5 p.m.	

RAMSGATE DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°	Yards.	Fathoms.			°		
1	56	57	600	3	Ebb	N N W	65	Noon	
2	55	57	800	3	do.	W S W	70	do.	
3	55	57	800	3	do.	W by S	65	12 10 p.m.	
4	56	53	900	3	do.	W by S	66	12 20 p.m.	
5	58	59	800	3	do.	W S W	70	Noon	
7	61	63	600	3	Flood	S	72	do.	
8	60	61	550	3½	do.	N W	73	12 10 p.m.	
9	59	60	550	3½	do.	S E	67	Noon	
10	59	60	600	3	do.	N E	75	12 45 p.m.	
11	57	59	500	3	do.	N N E	70	Noon	
12	58	59	500	3	do.	S	69	do.	
14	58	59	550	3	Low water	W by N	65	do.	
15	–	58	—	–	—	S W	62	do.	Impracticable.
16	–	57	—	–	—	N W	61	do.	do.
17	56	57	800	3	Ebb	S W	63	11 55 a.m.	
18	57	59	900	3	do.	N N W	73	12 10 p.m.	
19	57	59	800	3	do.	N N E	75	Noon	
21	57	59	800	3¼	do.	N N W	63	11 50 a.m.	
22	57	59	750	3¼	do.	N W	75	Noon	
23	58	59	600	3½	do.	N N W	72	do.	
24	59	60	500	3⅓	High water	N W by N	74	11 50 a.m.	
25	58	59	500	3½	Flood	N	74	Noon	
26	59	60	500	3	do.	N N E	75	do.	
28	59	60	500	3	do.	N	74	do.	
29	59	60	550	3	do.	N	74	do.	
30	58	59	600	3	do.	N E	69	do.	
July.									
1	–	59	—	–	—	N E	69	Noon	Impracticable.
2	–	59	—	–	—	N E	73	do.	do.
3	60	61	700	3	Ebb	E N E	74	do.	
5	61	62	700	3	do.	S W	75	do.	
6	61	62	650	3	do.	S W	74	12 10 p.m.	
7	61	62	600	3¼	do.	S W	74	Noon	
8	62	63	500	3½	do.	S	75	11 55 a.m.	
9	62	63	500	–	do.	W S W	78	Noon	
10	61	62	500	3⅓	Flood	S	74	do.	
12	62	63	500	3½	do.	S E	77	do.	
13	61	62	500	3	do.	S	76	11 55 a.m.	
14	62	63	550	3	do.	E	79	11 50 a.m.	
15	62	63	600	3	do.	N W	84	Noon	
16	63	64	700	3	Ebb	N N W	80	do.	
17	63	65	700	3	do.	S E	82	11 55 a.m.	
19	62	63	600	3	do.	N	78	Noon	
20	62	63	550	3½	do.	N N E	76	do.	
21	62	63	500	3⅓	do.	E N E	84	11 50 a.m.	
22	63	64	500	3½	do.	E S E	86	Noon	
23	63	64	500	3⅓	High water	N N W	79	do.	
24	64	65	500	3¼	Flood	S	81	do.	
26	64	64	500	3¼	do.	S S W	79	11 50 a.m.	
27	63	64	500	3¼	do.	W	74	11 55 a.m.	
28	63	64	500	3¼	do.	N E	79	Noon	
29	64	65	550	3¼	do.	W S W	79	do.	
30	64	65	600	3¼	do.	S W	79	12 10 p.m.	
31	64	65	600	3¼	Ebb	S W	80	12 20 p.m.	

Cromer Division.—Cromer Station, Norfolk.

Taken by William Frederick Hueull, Chief Officer.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	–*	53	From jetty	1½ fathoms	Ebb	SW	59	7 45 a.m.	Thunder.
11	–*	51	do.	do.	High water	E S E	52	6 p.m.	
12	–*	53	do.	do.	Flood	E	52	do.	
13	51	52	1½ miles	do.	Ebb	N N E	55	Noon	
14	–*	52	From jetty	5 fathoms	Flood	E	49	6 p.m.	* Too much surf to launch.
15	–*	51	do.	1½ fathoms	High water	–	50	10 a.m.	
17	–*	52	do.	do.	do.	–	50	10 45 a.m.	
18	–*	51	do.	do.	do.	N E	50	11 15 a.m.	
19	51	52	1½ miles	5 fathoms	Flood	SW	53	Noon	Thunder.
20	51	52	do.	do.	do.	SW	54	do.	
21	–*	53	From jetty	1½ fathoms	do.	N N E	58	do.	
22	–*	53	do.	do.	do.	N E	54	12 30 p.m.	
24	–*	52	do.	do.	High water	E S E	51	5 p.m.	
25	–*	53	do.	do.	do.	S E	53	5 45 p.m.	
26	–*	52	do.	do.	do.	E	50	6 15 p.m.	Fresh gales.
27	–*	49	do.	do.	Flood	E N E	51	6 30 p.m.	
28	–*	50	do.	do.	do.	E N E	47	do.	* Too much surf to launch.
29	–*	49	do.	do.	High water	E N E	46	10 a.m.	
31	–	50	do.	do.	do.	N N E	49	10 30 a.m.	
June.									
1	–*	52	From jetty	1½ fathoms	High water	N N W	60	11 a.m.	
2	–*	53	do.	do.	do.	E	63	11 30 a.m.	* Too much surf.
3	–*	54	do.	do.	do.	N	54	Noon	
4	52	55	1 mile	4 fathoms	Flood	SW	64	do.	
5	53	55	do.	do.	do.	W N W	70	do.	
7	59	61	do.	do.	do.	W S W	78	do.	
8	–	54	From jetty	1½ fathoms	do.	N N E	52	4 30 p.m.	Moderate gales.
9	–	56	do.	do.	do.	N E	52	5 p.m.	
10	–	55	do.	do.	do.	N N E	49	5 p.m.	
11	–*	54	do.	do.	do.	N	52	6 p.m.	Strong wind.
12	–*	56	do.	do.	Ebb	SW	61	10 30 a.m.	
14	–*	54	do.	do.	High water	N	52	10 a.m.	Strong gale.
15	–*	55	do.	do.	do.	W S W	57	11 a.m.	Fresh breeze.
16	–*	53	do.	do.	do.	N N E	48	11 30 a.m.	
17	–*	54	do.	do.	do.	W	55	Noon	
18	–*	52	do.	do.	Flood	N E	49	do.	
19	–*	52	do.	do.	do.	N E	49	do.	* Too much surf to launch.
21	–*	55	do.	do.	do.	N E	52	1 p.m.	
22	–*	56	do.	do.	do.	N E	54	2 p.m.	
23	–*	57	do.	do.	do.	N	60	3 p.m.	
24	–*	58	do.	do.	do.	N	54	4 p.m.	
25	59	56	1 mile	4 fathoms	Ebb	N E	57	Noon	
26	59	56	do.	do.	do.	N E	56	do.	
28	–*	59	From jetty	1½ fathoms	do.	N E	54	do.	Strong winds.
29	–*	58	do.	do.	do.	N E	54	do.	
30	–*	58	do.	do.	do.	N E	57	do.	* Too much surf.

CROMER DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	56	58	1 mile	5 fathoms	High water	E N E	54	Noon	
2	56	58	do.	do.	Flood	E N E	54	do.	
3	56	58	do.	do.	do.	E	62	do.	
5	–	59	–	1½ fathoms	Ebb	W	64	do.	
6	–	65	–	do.	do.	W	72	do.	
7	–	66	–	do.	do.	W	74	do.	
8	–	66	–	do.	do.	S W	74	do.	
9	60	62	½ mile	4 fathoms	Low water	W	78	do.	
10	60	62	do.	do.	Ebb	N N E	64	do.	
12	62	64	do.	do.	do.	S W	87	do.	
13	59	61	do.	do.	do.	N N E	57	do.	
14	60	62	do.	do.	do.	N N W	64	do.	
15	60	62	do.	do.	do.	N W	62	do.	
16	64	66	do.	do.	High water	W N W	68	do.	
17	64	67	do.	do.	Flood	E by S	66	do.	
19	61	62	do.	do.	do.	N E	58	do.	
20	62	64	do.	do.	do.	E N E	61	do.	
21	64	66	do.	do.	do.	E N E	62	do.	
22	64	66	do.	do.	do.	S E	74	do.	
23	64	66	do.	do.	do.	S E	76	do.	
24	64	65	do.	do.	Low water	S W	78	do.	
26	64	65	do.	do.	Ebb	S W	71	do.	
27	64	65	do.	do.	do.	S W	72	do.	
28	63	62	do.	do.	do.	E S E	64	do.	
29	63	64	do.	do.	do.	S E	70	do.	
30	64	65	do.	do.	do.	W by S	70	do.	
31	64	65	do.	do.	do.	W S W	72	do.	

FLEETWOOD DIVISION.—WHITEHAVEN STATION, CUMBERLAND.

Taken by RICHARD JINKS, Chief Officer.

May.			Miles.	Fathoms.				
10	48	49	1¾	8	Ebb	N E	55	Noon
11	49	49	2¼	8¾	High water	N N W	54	do.
12	49	50	2½	9	Flood	N W	53	do.
13	50	50	1¾	7	do.	N	52	do.
14	50	50	2	7½	do.	W N W	58	do.
15	50	50	2¼	7½	do.	W N W	58	do.
17	50	51	1½	6	do.	N N E	57	do.
18	49	50	2	6	do.	E	58	do.
19	49	50	1¼	5½	do.	N E	52	do.
20	49	50	2	6	Low water	N W	56	do.
21	50	51	1½	5½	Ebb	Calm.	56	do.
22	50	51	1¼	6½	do.	N W	61	do.
24	50	50	1¾	7	do.	N W	56	do.
25	50	50	1½	7	do.	S E	57	do.
26	50	51	1	4	High water	S E	54	do.
27	50	51	1	3½	Flood.	S E	55	do.
28	51	51	2	6	do.	W N W	54	do.
29	51	51	1¾	6	do.	W N W	52	do.
31	51	51	2	7	do.	W N W	59	do.

FLEETWOOD DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°	Miles.	Fathoms.			°		
1	50	51	1½	8	Flood	N E	59	Noon	
2	51	52	2	7	do.	NNW	59	do.	
3	51	51	1½	6	Low water	SW	60	do.	
4	51	52	1	5	Ebb	WSW	58	do.	
5	52	52	1½	6	do.	WNW	57	do.	
7	52	53	2	6½	do.	NNW	63	do.	
8	52	53	1⅓	7	do.	N N E	61	do.	
9	53	54	1¾	7½	do.	N N E	59	do.	
10	54	55	1½	8	High water	NNW	58	do.	
11	55	55	1½	7½	Flood	N N E	59	do.	
12	55	55	1½	7½	do.	N N E	60	do.	
14	56	56	1	4¾	do.	NW	57	do.	
15	56	56	–	2	do.	NNW	59	do.	Taken off this pier; strong gale.
16	56	56	–	1½	do.	NNW	56	do.	
17	55	56	2	5	do.	WNW	56	do.	
18	56	57	2	5	Low water	NW	59	do.	
19	56	57	1½	4½	Ebb	NW	60	do.	
21	56	57	1½	4½	do.	NW	60	do.	
22	57	57	2	6	do.	NNW	62	do.	
23	57	57	1⅓	5	do.	NNW	64	do.	
24	57	58	1½	6	do.	Calm	69	do.	
25	58	59	1½	6	Flood	Calm	69	do.	
26	58	59	2	7	do.	NW	68	do.	
28	59	59	1½	5	do.	N E	67	do.	
29	59	59	2	6	do.	NNW	66	do.	
30	59	60	2	6	do.	WNW	69	do.	
July.									
1	59	59	1½	6	Flood	WNW	70	Noon	
2	60	60	1	5	Low water	NNW	68	do.	
3	60	60	1½	5	Ebb	WNW	69	do.	
5	59	60	1¾	5	do.	SW	71	do.	
6	60	60	1	4½	do.	SW	63	do.	
7	–	60	–	–	—	WSW	67	do.	Not fit weather to launch. Taken off the pier head.
8	59	60	1	5	Ebb	WSW	66	do.	
9	60	60	1	5	do.	W	66	do.	
10	61	62	2	8	High water	W	65	do.	
12	62	63	1¾	8	Flood	WNW	67	do.	
13	–	61	–	–	do.	NW	65	do.	Bad weather. From pier head.
14	61	61	1	5	do.	W	61	do.	
15	62	62	1½	8	do.	WSW	67	do.	
16	62	62	1	6	do.	SW	61	do.	
17	63	64	2	6	Low water	Calm	65	do.	
19	64	65	1	6	Ebb	NNW	68	do.	
20	64	65	2	8	do.	SSW	68	do.	
21	64	65	2½	8	do.	SW	72	do.	
22	63	64	2	8	do.	WSW	69	do.	
23	63	64	3	9	do.	WSW	68	do.	
24	63	64	2½	9	High water	WSW	70	do.	
26	63	64	1	6	Flood	WSW	66	do.	
27	64	64	2	7	do.	NW	70	do.	
28	64	65	3	8	do.	SW	69	do.	
29	–	63	–	–	—	SSW	68	do.	Bad weather. From the pier head.
30	–	63	–	–	Flood	WSW	67	do.	
31	64	64	1½	5	do.	S S	66	do.	

Fleetwood Division.—Douglas Station, Isle of Man.

Taken by George Steed, Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	–	46	—	—	Ebb	N W	56	Noon	
11	–	47	—	—	do.	N W	54	do.	
12	–	48	—	—	do.	N W	54	do.	
13	–	48	—	—	High water	E S E	50	do.	
14	–	48	—	—	Flood	S E	53	do.	
15	–	48	—	—	do.	S E	52	do.	
17	–	47	—	—	do.	S E	50	do.	
18	–	48	—	—	do.	E	48	do.	
19	–	48	—	—	do.	N N W	51	do.	
20	–	49	—	—	Low water	N W	48	do.	
21	–	49	—	—	Ebb	S S E	58	do.	
22	–	50	—	—	do.	N W	53	do.	
24	–	50	—	—	do.	S E	56	do.	
25	–	49	—	—	do.	S E	51	do.	
26	–	49	—	—	do.	E	48	do.	
27	–	49	—	—	High water	E	47	do.	
28	–	49	—	—	Flood	E	51	do.	
29	–	50	—	—	do.	S	57	do.	
31	–	50	—	—	do.	E by S	55	do.	
June.									
1	–	51	—	—	Flood	S W	61	Noon	
2	–	50	—	—	do.	S W	60	do.	
3	–	51	—	—	do.	S W	60	do.	
4	–	53	—	—	Ebb	S W	59	do.	
5	–	53	—	—	do.	S W	61	do.	
7	–	52	—	—	do.	S W	64	do.	
8	–	53	—	—	do.	N N W	57	do.	
9	–	51	—	—	do.	N N W	53	do.	
10	–	52	—	—	do.	N W	56	do.	
11	–	52	—	—	High water	E S E	57	do.	
12	–	53	—	—	Flood	S W	58	do.	
14	–	52	—	—	do.	N W	54	do.	
15	51	52	¼ mile	7 fathoms	do.	N W	52	do.	
16	51	53	do.	do.	do.	N W	54	do.	
17	52	54	do.	do.	do.	S W	56	do.	
18	52	54	do.	do.	do.	N	55	do.	
19	53	55	do.	do.	Ebb	S E	56	do.	
21	53	55	do.	do.	do.	S S E	58	do.	
22	53	54	do.	do.	do.	N N W	56	do.	
23	52	53	do.	do.	do.	N N W	58	do.	
24	53	55	do.	do.	do.	S E	66	do.	
25	53	56	do.	do.	High water	S E	68	do.	
26	55	56	do.	do.	Flood	S	69	do.	
28	55	56	do.	do.	do.	E	71	do.	
29	55	56	do.	do.	do.	E	68	do.	
30	56	57	do.	do.	do.	S E	70	do.	

FLEETWOOD DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	55	56	400 yards	7 fathoms	Flood	S	69	Noon	
2	55	56	do.	do.	do.	S E	70	do.	
3	55	57	do.	do.	Low water	E S E	70	do.	
5	55	57	do.	do.	Ebb	S W	59	do.	
6	56	58	do.	do.	do.	W	66	do.	
7	56	57	do.	do.	do.	S W	61	do.	
8	56	58	do.	do.	do.	S W	61	do.	
9	56	58	do.	do.	do.	S W	61	do.	
10	56	58	do.	do.	do.	S	62	do.	
12	57	58	do.	do.	Flood	W	65	do.	
13	57	59	do.	do.	do.	N W	60	do.	
14	57	60	do.	do.	do.	N W	66	do.	
15	57	60	do.	do.	do.	N W	72	do.	
16	58	61	do.	do.	do.	S S W	70	do.	
17	59	61	do.	do.	do.	S E	72	do.	
19	59	62	do.	do.	Ebb	S E	71	do.	
20	59	60	do.	do.	do.	S	71	do.	
21	59	60	do.	do.	do.	S W	69	do.	
22	59	60	do.	do.	do.	S W	62	do.	
23	59	60	do.	do.	do.	S W	66	do.	
24	59	60	do.	do.	do.	S W	66	do.	
26	59	61	do.	do.	Flood	S W	64	do.	
27	59	61	do.	do.	do.	N W	62	do.	
28	59	61	do.	do.	do.	S W	66	do.	
29	60	61	do.	do.	do.	S S W	64	do.	
30	60	62	do.	do.	do.	S W	62	do.	
31	60	62	do.	do.	do.	W S W	64	do.	

CHESTER DIVISION, CHESHIRE.—BANGOR STATION, FLINTSHIRE.

Taken by WILLIAM LAWDEN, Chief Boatman.

May.			Yards.	Fathoms.				
10	–	50	300	10½	Ebb	–	61	11 30 a.m.
11	–	50	400	6½	do.	–	58	Noon
12	–	50	100	2	do.	–	58	1 p.m.
13	–	51	400	5½	do.	–	54	12 30 p.m.
14	–	52	100	3	High water	–	57	12 30 p.m.
15	–	52	100	3	do.	–	61	Noon
17	–	52	500	5	do.	–	59	12 30 p.m.
18	–	53	400	4	Flood	–	61	12 30 p.m.
19	–	51	100	2	do.	–	58	1 p.m.
20	–	53	300	1½	Low water	–	56	12 50 p.m.
21	–	51	100	2	do.	–	55	1 30 p.m.
22	–	52	400	5½	Ebb	–	61	Noon
24	–	53	400	4	do.	–	58	11 30 a.m.
25	–	53	500	2	do.	–	57	12 15 p.m.
26	–	50	50	5	do.	–	52	12 15 p.m.
27	–	50	50	2½	do.	–	52	Noon
28	–	51	100	2½	do.	–	53	12 30 p.m.
29	–	51	200	3	High water	–	53	Noon
31	–	52	400	9	do.	–	57	11 45 a.m.

CHESTER DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°	Yards.	Fathoms.			°		
1	–	56	350	2	Flood	–	64	Noon	
2	–	55	250	5	do.	–	60	12 15 p.m.	
3	–	54	200	3	Low water	–	58	Noon	
4	–	56	350	5	Ebb	–	59	do.	
5	–	56	450	4½	do.	–	59	12 30 p.m.	
7	–	58	400	5	do.	–	54	12 15 p.m.	
8	–	56	300	6	do.	–	59	Noon	
9	–	58	200	1½	do.	–	62	12 30 p.m.	
10	–	57	100	2½	do.	–	60	12 15 p.m.	
11	–	57	200	3	High water	–	61	11 45 a.m.	
12	–	56	400	5	Flood	–	60	12 15 p.m.	
14	–	55	200	3	do.	–	58	1 p.m.	
15	–	51	100	2	do.	–	52	Noon	
16	–	54	150	2	do.	–	56	12 30 p.m.	
17	–	54	300	5	do.	–	55	Noon	
18	–	54	400	4	Low water	–	58	do.	
19	–	56	300	3½	Ebb	–	57	do.	
21	–	58	500	5	do.	–	62	do.	
22	–	61	400	5½	do.	–	63	1 p.m.	
23	–	59	300	3½	do.	–	63	12 30 p.m.	
24	–	59	400	5½	do.	–	65	12 15 p.m.	
25	–	60	300	4½	High water	–	69	Noon	
26	–	60	400	5	Flood	–	68	do.	
28	–	63	500	6	do.	–	69	12 15 p.m.	
29	–	63	550	6	do.	–	69	Noon	
30	–	62	300	2	do.	–	66	12 30 p.m.	
July.									
1	–	62	300	3½	Flood	–	69	12 15 p.m.	Squally.
2	–	64	400	5	do.	–	71	12 30 p.m.	Overcast.
3	–	62	350	3	Low water	–	70	12 15 p.m.	Cloudy.
5	–	62	400	3½	Ebb	–	66	11 45 a.m.	Showers.
6	–	63	200	3	do.	–	69	Noon	Cloudy.
7	–	62	400	5	do.	–	69	12 15 p.m.	Overcast.
8	–	61	250	3½	do.	–	66	12 30 p.m.	do.
9	–	61	400	6	do.	–	66	12 20 p.m.	Cloudy.
10	–	61	500	7	do.	–	65	Noon	do.
12	–	62	450	6½	High water	–	66	12 10 p.m.	do.
13	–	59	300	4	Flood	–	63	12 30 p.m.	do.
14	–	61	500	6	do.	–	68	12 15 p.m.	do.
15	–	62	400	4	do.	–	70	12 15 p.m.	do.
16	–	61	350	3½	do.	–	68	12 30 p.m.	do.
17	–	65	200	3	do.	–	76	11 45 a.m.	do.
19	–	64	300	5	Low water	–	74	12 30 p.m.	do.
20	–	65	250	3½	Ebb	–	74	Noon	do.
21	–	64	450	4	do.	–	74	12 15 p.m.	Overcast.
22	–	62	300	5½	do.	–	72	12 40 p.m.	do.
23	–	63	450	6	do.	–	72	12 15 p.m.	Cloudy.
24	–	62	300	5	High water	–	69	11 45 a.m.	do.
26	–	61	400	6	Flood	–	68	Noon	Overcast.
27	–	62	500	7	do.	–	65	do.	do.
28	–	63	300	3½	do.	–	66	12 10 p.m.	Cloudy.
29	–	61	400	5	do.	–	67	Noon	do.
30	–	62	300	4	do	–	69	12 15 p.m.	do.
31	–	62	450	5	do.	–	67	11 45 a.m.	do.

Milford Division.—Goodwick Station, Pembrokeshire.

Taken by John G. Annal, Chief Officer.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Feet.			°		
10	–	50	At the Quay	2	Low water	E	56	Noon	
11	–	53	do.	2	Ebb	N N E	58	do.	
12	–	51	do.	3	do.	N E	59	do.	
13	–	54	do.	4	do.	N E	63	do.	
14	–	52	do.	5	do.	E	57	do.	
15	–	52	do.	6	do.	E S E	63	do.	
17	–	53	do.	7	do.	WSW	56	do.	
18	–	52	do.	8	High water	WSW	57	do.	
19	–	49	do.	7	Flood	N	47	do.	
20	–	54	do.	6	do.	NW	59	do.	
21	–	54	do.	5	do.	N	60	do.	
22	–	55	do.	4	do.	N	63	do.	
24	–	53	do.	3	do.	S	55	do.	
25	–	55	do.	2	do.	S E	61	do.	
26	–	55	do.	2	Low water	E	56	do.	
27	–	52	do.	2	Ebb	E	53	do.	
28	–	51	do.	3	do.	E	50	do.	
29	–	51	do.	4	do.	N E	60	do.	
31	–	53	do.	5	do.	NW	59	do.	
June.									
1	–	55	At the Quay	6	Ebb	WSW	64	Noon	
2	–	54	do.	7	do.	S S W	56	do.	
3	–	55	do.	8	High water	W	64	do.	
4	–	57	do.	8	Flood	W	63	do.	
5	–	60	do.	7	do.	W	64	do.	
7	–	59	do.	6	do.	W	66	do.	
8	–	55	do.	5	do.	N E	64	do.	
9	–	57	do.	4	do.	N E	64	do.	
10	–	58	do.	3	do.	N E	65	do.	
11	–	57	do.	2	Low water	N E	55	do.	
12	–	57	do.	2	Ebb	W	63	do.	
14	–	55	do.	3	do.	N	62	do.	
15	–	55	do.	4	do.	NW	62	do.	
16	–	57	do.	5	do.	N	62	do.	
17	–	57	do.	6	do.	W	64	do.	
18	–	55	do.	7	do.	N E	56	do.	
19	–	56	do.	8	High water	N E	57	do.	
21	–	59	do.	7	Flood	N E	66	do.	
22	–	55	do.	6	do.	N E	56	do.	
23	–	56	do.	5	do.	N	57	do.	
24	–	58	do.	4	do.	E	66	do.	
25	–	60	do.	3	do.	Calm	64	do.	
26	–	62	do.	2	do.	E	65	do.	
28	–	59	do.	2	Ebb	E	70	do.	
29	–	59	do.	3	do.	E	67	do.	
30	–	59	do.	4	do.	E	70	do.	

MILFORD DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°		Feet.			°		
1	–	62	At the Quay	5	Ebb	E	71	Noon	
2	–	60	do.	7	do.	N	72	do.	
3	–	62	do.	8	High water	E	69	do.	
5	–	60	do.	7	Flood	SW	64	do.	
6	–	62	do.	6	do.	W	68	do.	
7	–	60	do.	5	do.	WSW	64	do.	
8	–	60	do.	4	do.	SW	63	do.	
9	–	62	do.	2	Low water	W	64	do.	
10	–	61	do.	3	Ebb	N	73	do.	
12	–	61	do.	4	do.	NNW	75	do.	
13	–	59	do.	5	do.	N E	69	do.	
14	–	62	do.	6	do.	W	70	do.	
15	–	63	do.	7	do.	N E	73	do.	
16	–	62	do.	8	High water	E	70	do.	
17	–	63	do.	7	Flood	E	68	do.	
19	–	61	do.	6	do.	E	64	do.	
20	–	63	do.	5	do.	Calm	70	do.	
21	–	63	do.	4	do.	S	70	do.	
22	–	60	do.	3	do.	SW	66	do.	
23	–	63	do.	2	Low water	W	72	do.	
24	–	63	do.	3	Ebb	W	73	do.	
26	–	62	do.	4	do.	W	68	do.	
27	–	62	do.	5	do.	NW	70	do.	
28	–	60	do.	6	do.	E N E	64	do.	
29	–	60	do.	7	do.	SW	63	do.	
30	–	62	do.	8	do.	SW	68	do.	
31	–	62	do.	8	Low water	W	66	do.	

QUEENSTOWN DIVISION.—CROSSHAVEN STATION, CO. CORK.

Taken by M. LYNCH, Chief Boatman.

May.									
10	53	53	200 yards	4 fathoms	Ebb	NW	53	Noon	Flood runs west, and Ebb east at all times.
11	53	53	do.	3 fathoms	do.	N	52	do.	
12	53	53	do.	do.	do.	NW	51	do.	
13	53	55	do.	do.	do.	W	54	do.	
14	52	55	do.	do.	do.	W	53	do.	
15	52	53	do.	do.	do.	E S E	51	do.	
17	52	54	do.	do.	do.	S E	51	do.	
18	54	55	do.	5 fathoms	High water	S E	54	do.	
19	53	55	do.	3½ fathoms	do.	S E	51	do.	
20	53	54	do.	4 fathoms	do.	S	53	do.	
21	53	56	do.	3¼ fathoms	Flood	S W	58	do.	
22	53	56	do.	3½ fathoms	do.	S	59	do.	
24	53	56	300 yards	4 fathoms	do.	S	62	do.	
25	53	57	do.	3 fathoms	do.	S	59	11 30 a.m.	
26	51	54	200 yards	3½ fathoms	do.	SW	56	Noon	
27	51	53	do.	3 fathoms	do.	SW	54	do.	
28	50	52	do.	do.	do.	NW	52	do.	
29	52	54	do.	3½ fathoms	do.	N	52	do.	
31	54	56	do.	3 fathoms	do.	W	57	do.	

QUEENSTOWN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	57	58	200 yards	3 fathoms	Ebb	W	63	Noon	The flood in the main channel of this harbour runs north, and the Ebb south; but in the Carrigaline River, where these observations were principally taken, the Flood runs west, and the Ebb east.
2	56	59	do.	5½ fathoms	do.	W	64	do.	
3	56	58	do.	3¾ fathoms	do.	NW	62	do.	
4	54	56	do.	3½ fathoms	do.	SW	68	do.	
5	56	56	do.	do.	do.	SW	62	do.	
7	56	64	do.	3 fathoms	do.	SW	69	do.	
8	56	68	do.	do.	do.	S E	62	do.	
9	59	62	300 yards	do.	Low water	S E	72	do.	
10	60	64	do.	4 fathoms	do.	S	69	do.	
11	62	64	200 yards	3 fathoms	do.	S	66	do.	
12	61	62	400 yards	5 fathoms	Flood	SW	63	do.	
14	59	60	500 yards	4 fathoms	do.	NW	60	do.	
15	57	59	400 yards	3 fathoms	do.	NW	59	do.	
16	59	60	do.	3½ fathoms	do.	NW	62	do.	
17	61	63	300 yards	3 fathoms	do.	NW	64	do.	
18	62	64	500 yards	6 fathoms	do.	N	66	do.	
19	60	62	do.	4 fathoms	do.	NW	64	do.	
21	61	64	do.	3 fathoms	do.	NW	69	do.	
22	62	64	400 yards	do.	High water	N	69	do.	
23	63	64	300 yards	5 fathoms	do.	S	70	do.	
24	64	66	do.	3 fathoms	do.	S	68	do.	
25	63	66	400 yards	4 fathoms	Ebb	S	61	do.	
26	65	66	do.	do.	do.	S	64	do.	
28	68	70	300 yards	3 fathoms	do.	S	79	do.	
29	69	71	do.	do.	do.	S	76	do.	
30	71	80	400 yards	4 fathoms	do.	S E	81	do.	
July.									
1	71	79	300 yards	4 fathoms	Ebb	S	79	Noon	
2	71	80	do.	3 fathoms	do.	S	84	do.	
3	70	78	400 yards	do.	do.	S E	80	do.	
5	68	76	800 yards	9 fathoms	do.	SW	70	do.	
6	66	71	900 yards	11 fathoms	do.	SW	69	do.	
7	64	70	600 yards	8 fathoms	Low water	SW	66	do.	
8	63	68	400 yards	4 fathoms	do.	SW	68	do.	
9	64	67	500 yards	3 fathoms	do.	SW	70	do.	
10	64	69	300 yards	4 fathoms	Flood	SW	76	do.	
12	65	69	do.	5 fathoms	do.	N	70	do.	
13	66	70	do.	11 fathoms	do.	N	79	do.	
14	67	70	30 yards	5 fathoms	do.	S	76	do.	
15	64	69	900 yards	3 fathoms	do.	E	84	do.	
16	60	64	600 yards	do.	do.	S E	82	2 p.m.	
17	62	65	300 yards	6 fathoms	do.	S E	89	Noon	
19	61	65	400 yards	7 fathoms	do.	SW	86	do.	
20	59	64	500 yards	6 fathoms	do.	SW	80	do.	
21	56	66	800 yards	9 fathoms	do.	SW	70	do.	
22	54	64	900 yards	4 fathoms	High water	SW	79	do.	
23	53	61	300 yards	3 fathoms	Ebb	SW	71	do.	
24	51	60	400 yards	4 fathoms	do.	SW	73	do.	
26	50	61	300 yards	3 fathoms	Low water	SW	71	do.	
27	52	59	do.	4 fathoms	do.	S	73	do.	
28	49	53	400 yards	3 fathoms	do.	SW	63	do.	
29	48	53	300 yards	4 fathoms	Ebb	W	66	do.	
30	45	49	400 yards	3 fathoms	do.	W	56	do.	
31	41	46	3 yards	4 fathoms	do.	NW	53	do.	

Waterford Division.—Tramore Station, Co. Waterford.

Taken by Richard Johns, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	–	52	Near the	1 Foot	F ¼ F E	N E	50	12 Noon	Rain.
11	–	54	shore.	do.	Low water	N	58	do.	Cloudy.
12	–	54	do.	do.	Low ¼ E W	N	58	do.	do.
13	–	–	—	—	—	–	–	—	—
14	–	–	—	—	—	–	–	—	—
15	–	–	—	—	—	–	–	—	—
17	–	55	Near the	1 Foot	H ½ E W	S E	63	12 Noon	Rain.
18	–	55	shore.	do.	F ¼ E W	S E	65	do.	Cloudy.
19	–	53	do.	do.	F ¼ E W	N	66	do.	do.
20	–	54	do.	do.	High water	N	65	do.	do.
21	–	54	do.	do.	H ¼ F E	N	61	do.	do.
22	–	54	do.	do.	H ¼ F E	N	66	do.	do.
24	–	56	do.	do.	H ½ F E	S S E	60	do.	Rain.
25	–	57	do.	do.	F ¼ F E	S S E	67	do.	Cloudy.
26	–	55	do.	do.	Low water	E	57	do.	Rain.
27	–	56	do.	do.	Low water	E	58	do.	Gloomy.
28	–	58	do.	do.	H ¼ E W	N E	60	do.	Cloudy.
29	–	56	do.	do.	H ¼ E W	N E	60	do.	do.
31	–	57	do.	do.	H ½ E W	N	62	do.	do.
June.									
1	–	57	Near the	1 Foot	—	W	65	Noon	Cloudy.
2	–	57	shore.	do.	—	S W	67	do.	do.
3	–	56	do.	do.	—	W	65	do.	do.
4	–	56	do.	do.	—	W	65	do.	do.
5	–	57	do.	do.	—	W S W	67	do.	do.
7	–	57	do.	do.	—	W	68	do.	do.
8	–	58	do.	do.	—	W	69	do.	Gloomy.
9	–	61	do.	do.	—	S W	72	do.	Fine.
10	–	62	do.	do.	—	N	74	do.	do.
11	–	61	do.	do.	—	N	72	do.	do.
12	–	59	do.	do.	—	W	70	do.	Cloudy.
14	–	59	do.	do.	—	N W	68	do.	do.
15	–	59	do.	do.	—	N W	68	do.	do.
16	–	60	do.	do.	—	N W	69	do.	do.
17	–	57	do.	do.	—	W	65	do.	Showery.
18	–	57	do.	do.	—	N W	65	do.	do.
19	–	57	do.	do.	—	N W	65	do.	Cloudy.
21	–	59	do.	do.	—	N	68	do.	do.
22	–	59	do.	do.	—	N	69	do.	do.
23	–	58	do.	do.	—	N	68	do.	do.
24	–	65	do.	do.	—	N	74	do.	Fine.
25	–	64	do.	do.	—	N	72	do.	do.
26	–	63	do.	do.	—	W	70	do.	do.
28	–	64	do.	do.	—	E	72	do.	do.
29	–	63	do.	do.	—	E	72	do.	do.
30	–	63	do.	do.	—	E	73	do.	do.
July.									
1	–	63	Near the	1 Foot	—	N	73	Noon	Fine.
2	–	64	shore.	do.	—	N	74	do.	do.
3	–	65	do.	do.	—	W	76	do.	do.
5	–	63	do.	do.	—	S W	68	do.	Gloomy.
6	–	63	do.	do.	—	W	69	do.	Cloudy.
7	–	63	do.	do.	—	S W	68	do.	Fog.

WATERFORD DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July —*con.*	°	°					°		
8	–	65	Near the	1 Foot	—	SW	68	Noon	Cloudy.
9	–	65	shore.	do.	—	WSW	68	do.	do.
10	–	66	do.	do.	—	W	73	do.	Fine.
12	–	66	do.	do.	—	N	73	do.	do.
13	–	66	do.	do.	—	NW	75	do.	do.
14	–	64	do.	do.	—	NW	74	do.	Cloudy.
15	–	62	do.	do.	—	NW	72	do.	do.
16	–	64	do.	do.	—	E	74	do.	Fine.
17	–	66	do.	do.	—	W	75	do.	do.
19	–	66	do.	do.	—	SW	74	do.	do.
20	–	65	do.	do.	—	SE	73	do.	Fog.
21	–	64	do.	do.	—	WSW	73	do.	Cloudy.
22	–	65	do.	do.	—	W	74	do.	do.
23	–	64	do.	do.	—	WNW	73	do.	Fine.
24	–	64	do.	do.	—	WSW	72	do.	Cloudy.
26	–	64	do.	do.	—	WNW	69	do.	do.
27	–	64	do.	do.	—	NW	69	do.	do.
28	–	64	do.	do.	—	WNW	69	do.	Fine.
29	–	63	do.	do.	—	WSW	67	do.	Rain.
30	–	63	do.	do.	—	WNW	66	do.	Fog.
31	–	63	do.	do.	—	WNW	66	do.	Cloudy.

ARKLOW DIVISION.—ARKLOW STATION, CO. WICKLOW.

Taken by ROBERT M'CONNELL, Chief Boatman.

May.—During this month the crew were on board H.M.S. *Royal George* for summer cruise.

June.			Miles.	Fathoms.					
1	50	52	1	6	Flowing	WSW	60	Noon	Cloudy.
2	50	56	$1\frac{1}{2}$	7	Flood	SW	58	12 15 p.m.	do.
3	50	52	$1\frac{3}{4}$	8	do.	SW	59	12 10 p.m.	do.
4	51	50	$2\frac{1}{4}$	$8\frac{1}{4}$	do.	SW	54	12 15 p.m.	do.
5	50	50	2	8	do.	W	56	12 10 p.m.	do.
7	52	51	$2\frac{1}{2}$	$8\frac{1}{2}$	do.	SSW	74	12 15 p.m.	do.
8	50	52	$2\frac{3}{4}$	8	Ebb	NE	58	Noon	Clear.
9	52	54	$2\frac{1}{2}$	$8\frac{1}{2}$	do.	SE	60	12 30 p.m.	Hazy.
10	–	–	—	–	—	—	—	—	Crew employed.
11	51	50	$2\frac{3}{4}$	9	Ebb	S	64	12 10 p.m.	Hazy.
12	–	–	—	–	—	—	—	—	Crew employed.
14	50	52	$3\frac{1}{2}$	10	Ebb	W	70	12 15 p.m.	Cloudy.
15	–	–	—	–	—	—	—	—	Impracticable.
16	52	50	$3\frac{1}{2}$	10	Flood	S	60	12 30 p.m.	Cloudy.
17	50	50	4	$9\frac{1}{2}$	do.	SW	58	12 10 p.m.	do.
18	50	52	$4\frac{1}{2}$	$10\frac{1}{2}$	do.	SW	56	Noon	Rain.
19	52	50	$4\frac{1}{2}$	11	do.	NE	54	12 15 p.m.	Hazy.
21	52	50	4	11	do.	SE	72	Noon	do.
22	52	50	$4\frac{1}{2}$	11	Low water	NW	64	12 30 p.m.	Cloudy.
23	52	50	$4\frac{1}{2}$	12	Ebb	S	76	12 15 p.m.	do.
24									
25									
26	–	–	—	–	—	—	—	—	Thermometer broken by accident on 23rd.
28									
29									
30									

ARKLOW DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°	Miles.	Feet.			°		
1	–	–	—	–	—	—	—	—	Thermometer arrived on 2nd.
2									
3	58	54	2	7	Flowing	S	72	11 30 a.m.	Hazy.
5	58	54	2½	8	Flood	SSW	68	Noon	Cloudy.
6	–	–	—	–	—	—	—	—	Impracticable.
7	–	–	—	–	—	—	—	—	do.
8	–	–	—	–	—	—	—	—	do.
9	–	–	—	–	—	—	—	—	do.
10	60	50	3	8½	Ebb	SW	70	12 30 p.m.	Cloudy.
12	50	50	3½	10	do.	NW	66	12 20 p.m.	do.
13	60	52	3½	10½	High water	NW	70	12 30 p.m.	do.
14	58	54	3½	10	Flowing	WNW	84	12 10 p.m.	do.
15	58	54	3½	10¼	Flood	SW	84	12 15 p.m.	do.
16	60	56	4	11	do.	S	86	11 40 a.m.	do.
17	58	54	4	11	do.	SW	82	Noon	Foggy.
19	–	–	—	–	—	—	—	—	Impracticable.
20	60	56	4	11	Ebb	S	76	12 30 p.m.	Foggy.
21	58	54	4½	12	do.	S	76	11 40 a.m.	do.
22	60	52	4	10	do.	SW	72	Noon	Cloudy.
23	60	52	4	10½	do.	SW	70	11 50 a.m.	do.
24	60	52	4	11	do.	S	72	12 30 p.m.	Clear.
26	60	52	4	12	Flood	NW	72	12 30 p.m.	Cloudy.
27	–	–	—	–	—	—	—	—	Crew employed.
28	60	52	4½	12	Flood	SW	68	11 40 a.m.	Cloudy.
29	–	–	–	–	—	—	—	—	Impracticable.
30	60	50	1	7	Flood	SW	64	1 p.m.	Rain.
31	60	52	4½	12	do.	SW	68	11 40 a.m.	Cloudy.

DUBLIN DIVISION.—HOWTH STATION, CO. DUBLIN.

Taken by WILLIAM HORN.

May.									
10	–	49	300 yds.	6 feet	¼ flood	NNW	50	Noon.	Cloudy.
11	–	49	330	4 feet	do.	NW	50	do.	Cloudy, rain.
12	–	48	400	6 feet	¾ flood	NW	50	do.	Rough weather.
13	40	–	600	3½ fathoms	High water	E	50	do.	Dry, harsh wind.
14	–	50	400	7 feet	Last ¼ flood	E	50	do.	Overcast.
15	50	–	600	3 fathoms	¼ flood	E	50	do.	do.
17	–	50	20	7 feet	¾ flood	N E	50	do.	Thick weather.
18	–	50	50	14 feet	½ flood	N	50	do.	do.
19	–	50	400	11 feet	¼ flood	N	50	do.	Showery.
20	40	–	900	3½ fathoms	Ebb	N E	50	do.	Thunder.
21	–	50	700	6 feet	¼ ebb	E	50	do.	Cloudy.
22	–	50	600	3 fathoms	do.	E	50	do.	Overcast.
24	–	50	300	do.	½ ebb	E	50	do.	do.
25	–	50	100	do.	¼ ebb	E N E	50	do.	Very rainy.
26	50	–	700	5 fathoms	1st of ebb	E N E	40	do.	Rough weather.
27	50	–	600	4 fathoms	High water	N E	40	do.	Fine.
28	–	50	400	3 fathoms	Last ¼ flood	N	40	do.	Calm.
29	–	50	50	2 fathoms	1st ¼ ebb	S E	50	do.	Cloudy.
31	50	–	½ mile	3½ fathoms	½ flood	—	50	do.	—

DUBLIN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	–	50	3 yards	6 feet	Flood	S E	50	Noon	Overcast.
2	–	50	600 yards	do.	do.	S E	50	do.	Thick weather.
3	–	50	300 yards	12 feet	do.	W	50	do.	Overcast.
4	–	50	500 yards	14 feet	Ebb	N W	50	do.	do.
5	–	50	30 yards	9 feet	do.	S W	60	do.	do.
7	–	50	100 yards	20 feet	do.	S	60	do.	Cloudy.
8	–	50	900 yards	10 feet	do.	N	50	do.	Fine.
9	–	50	15 yards	9 feet	do.	N	50	do.	On Kane's oyster bed.
10	50	–	200 yards	20 feet	do.	N	50	do.	Fine.
11	–	50	60 yards	10 feet	High water	N	50	do.	do.
12	50	–	600 yards	4½ fathoms	Flood	S W	50	do.	At Ireland's Eye; fine
14	–	50	50 yards	15 feet	do.	S W	60	do.	Cloudy.
15	–	50	60 yards	9 feet	do.	N	60	do.	do.
16	–	50	50 yards	10 feet	do.	—	60	do.	Showery.
17	50	–	½ mile	3 fathoms	do.	S	60	do.	Cloudy.
18	–	50	500 yards	9 feet	Ebb	S W	60	do.	do.
19	50	–	½ mile	6 fathoms	do.	S W	60	do.	Fine.
21	50	–	do.	do.	do.	S W	60	do.	do.
22	50	–	do.	5 fathoms	do.	N E	60	do.	do.
23	–	50	500 yards	4 fathoms	do.	N E	60	do.	do.
24	–	50	20 yards	20 feet	do.	W	60	do.	On Kane's oyster bed.
25	50	–	1 mile	6 fathoms	Flood	E	60	do.	Fine.
26	–	50	20 yards	9 feet	do.	—	70	do.	Cloudy; on Kane's oyster bed.
28	–	50	50 yards	12 feet	do.	N E	60	do.	Fine.
29	–	50	19 yards	11 feet	do.	N	60	do.	do.
30	–	50	do.	15 feet	do.	N	60	do.	do.
July.									
1	50	–	¾ mile	6 fathoms	Flood	N E	60	Noon	At sea, between Ireland's Eye and Lighthouse.
2	50	–	½ mile	5⅓ fathoms	do.	E	60	do.	Fine.
3	50	–	¼ mile	2½ fathoms	Ebb	S E	60	do.	do.
5	50	–	½ mile	6 fathoms	do.	W	70	do.	do.
6	50	–	do.	do.	do.	W	60	do.	Cloudy.
7	–	50	40 yards	6 feet	do.	W	60	do.	Fine.
8	–	50	300 yards	9 feet	do.	S	60	do.	do.
9	–	50	600 yards	3 fathoms	do.	W	70	do.	do.
10	–	50	500 yards	2 fathoms	Flood	S W	70	do.	do.
12	–	50	60 yards	3½ fathoms	do.	E	60	do.	Cloudy.
13	–	50	70 yards	do.	do.	N W	70	do.	do.
14	50	–	1000 yards	do.	do.	W	70	do.	do.
15	50	–	½ mile	4⅓ fathoms	do.	W	70	do.	do.
16	50	–	do.	do.	do.	S E	70	do.	do.
17	50	–	300 yards	3⅓ fathoms	Ebb	S E	70	do.	do.
19	60	–	400 yards	4¼ fathoms	do.	E	70	do.	do.
20	50	–	300 yards	2¾ fathoms	do.	S	70	do.	do.
21	–	60	40 yards	3½ fathoms	do.	S W	60	do.	Strong breeze.
22	60	–	300 yards	2 fathoms	do.	S W	70	do.	Light air.
23	60	–	do.	2¼ fathoms	do.	S W	70	do.	do.
24	–	60	400 yards	3 fathoms	do.	S E	70	do.	Light air; cloudy.
26	–	60	600 yards	2¼ fathoms	do.	N W	70	do.	do.
27	–	60	200 yards	do.	Flood	W	60	do.	do.
28	–	60	600 yards	2½ fathoms	do.	W	70	do.	do.
29	–	50	do.	do.	do.	S W	60	do.	Stormy.
30	–	50	do.	6 fathoms	do.	W	60	do.	Fine.
31	50	–	¾ mile	do.	do.	W	70	do.	do.

Carlingford Division.—Cranfield Point Station, Co. Down.

Taken by Daniel Collins, Chief Officer.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°	Miles				°		
12	–	55	—	4 feet	High water	N	56	11 30 a.m.	No Oyster Beds at Cranfield Station.
13	–	55	—	5 feet	do.	S	56	Noon	
14	–	54	—	do.	do.	E	57	do.	Fresh wind & cloudy
15	–	54	—	do.	Flood	E by S	56	do.	do.
17	–	56	—	do.	do.	S E	58	do.	do.
18	–	56	—	4 feet	do.	E	58	do.	do.
19	57	–	½	4 fathoms	do.	N E	60	do.	do.
20	58	–	½	do.	do.	N	60	do.	do.
21	–	56	—	5 feet	Low water	N N E	58	do.	do.
22	54	–	1	6 fathoms	do.	N N W	58	do.	Moderate wind and cloudy.
24	–	55	—	4 feet	Ebb	N W	58	do.	do.
25	–	55	—	do.	do.	N E	60	do.	Fresh wind & cloudy
26	–	57	—	do.	do.	E	60	do.	do.
27	–	56	—	do.	do.	E S E	61	do.	do.
28	–	56	—	6 feet	High water	E S E	61	do.	do.
29	57	–	½	5 fathoms	do.	S	60	do.	do.
31	56	–	¼	2½ fathoms	Flood	S S E	59	do.	do.
June.									
1	–	57	—	4 feet	Flood	N N W	60	Noon	
2	55	–	½	4 fathoms	do.	S S W	60	do.	
3	56	–	1	5 fathoms	do.	S W	61	do.	Moderate breeze and cloudy.
4	56	–	1	do.	do.	W S W	60	do.	do.
5	58	–	¾	do.	Low water	S W	63	do.	do.
7	–	63	—	4 feet	Ebb	W	64	do.	do.
8	62	–	1½	5½ fathoms	do.	N W	65	do.	Moderate breeze and clear.
9	62	–	1	5 fathoms	do.	Var.	65	do.	do.
10	–	63	–	5 feet	do.	Var.	65	do.	do.
11	60	–	1½	6 fathoms	do.	Var.	65	do.	Fresh breeze and cloudy.
12	–	62	—	5 feet	High water	S W	64	do.	Moderate breeze and cloudy.
14	–	61	—	do.	Flood	N	63	do.	do.
15	–	60	—	do.	do.	N	63	do.	Strong gales, &c.
16	–	60	—	do.	do.	N W	63	do.	Fresh breezes.
17	–	59	—	do.	do.	N W	62	do.	do.
18	–	59	—	do.	Low water	N W	63	do.	do.
19	56	–	1	5 fathoms	Ebb	N W	63	do.	Moderate and cloudy
21	57	–	1½	do.	do.	N	63	do.	do.
22	–	63	—	5 feet	do.	N	67	do.	Moderate and clear.
23	–	63	—	do.	do.	N W	67	do.	do.
24	–	64	—	do.	do.	N W	69	do.	do.
25	60	–	1	5 fathoms	High water	Var.	72	do.	Moderate and hazy.
26	62	–	1½	6½ fathoms	do.	S E	75	do.	do.
28	–	63	—	5 feet	Flood	N	70	do.	do.
29	–	63	—	6 feet	do.	N E	73	do.	Moderate and clear.
30	–	65	—	5 feet	do.	E N E	78	do.	do.

CARLINGFORD DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°	Miles.				°		
1	–	66	—	4 feet	Flood	SW	78	Noon	
2	–	67	—	do.	do.	N	77	do.	
3	65	–	1½	4 fathoms	Low water	NE	75	do.	Fresh breezes.
5	66	–	1	3 fathoms	do.	Var.	77	do.	Moderate breezes.
6	–	66	—	4 feet	Ebb	NW	75	do.	Fresh breezes.
7	–	66	—	do.	do.	SE	76	do.	do.
8	–	66	—	5 feet	do.	SSE	76	do.	do.
9	–	65	—	do.	do.	S	70	do.	do.
10	–	66	—	do.	do.	S	74	do.	Fresh breezes; clear.
12	64	–	2	12 fathoms	High water	SE	71	do.	do.
13	–	66	—	6 feet	Flood	W	70	do.	do.
14	–	65	—	do.	do.	NW	70	do.	do.
15	65	–	1	4 fathoms	do.	NWv.	82	do.	do.
16	64	–	1½	6 fathoms	do.	S	80	do.	do.
17	–	67	—	4 feet	do.	E	82	do.	do.
19	67	–	1	4 fathoms	Low water	SSE	83	do.	do.
20	–	70	—	3 feet	Ebb	S	84	do.	do.
21	–	68	—	do.	do.	SSW	80	do.	Fresh breezes; hazy
22	–	72	—	4 feet	do.	Sby W	82	do.	Moderate breeze; fog
23	–	70	—	do.	do.	Var.	80	do.	do.
24	66	–	2	16 fathoms	do.	SW	76	do.	Moderate breeze; rain
26	64	–	½	6 fathoms	High water	W	76	do.	Fresh breeze; cloudy
27	–	67	—	6 feet	Flood	Var.	80	do.	Moderate breeze; clear.
28	–	66	—	do.	do.	S	68	do.	Fresh gales; rain.
29	–	60	—	5 feet	do.	SW	65	do.	Fresh breezes & rain.
30	–	60	—	do.	do.	SSW	65	do.	do.
31	65	–	1	4 fathoms	do.	WSW	78	do.	do.

CARRICKFERGUS DIVISION.—CARRICKFERGUS STATION, CO. ANTRIM.

Taken by WILLIAM BAVAGE, Chief Boatman.

May.									
10	–	49	1½ miles	4 fathoms	Ebb	NNE	50	Noon	Light airs and hazy.
11	–	49	1 mile	3½ fathoms	do.	W	50	do.	Moderate and fine.
12	–	48	do.	3 fathoms	do.	NW	49	do.	Moderate & cloudy.
13	–	49	¾ mile	do.	do.	ESE	50	do.	Moderate and fine.
14	–	50	1 mile	do.	Flood	ESE	51	do.	do.
15	–	52	300 yards	1½ fathoms	do.	ESE	51	do	Strong winds; clear.
17	–	51	1¼ miles	3½ fathoms	do.	ESE	51	12 20 p.m.	Moderate & cloudy.
18	–	47	300 yards	1½ fathoms	do.	N	48	Noon	Light airs and rain.
19	–	50	1¼ miles	3 fathoms	do.	N	51	do.	Fresh breeze; clear.
20	–	48	1 mile	do.	Ebb	NNW	50	12 20 p.m.	Fresh breeze; cloudy
21	–	52	1½ miles	3½ fathoms	do.	NE	54	do.	Moderate and fine.
22	–	53	300 yards	5 feet	do.	W	56	Noon	Light breeze; cloudy
24	–	52	1 mile	3½ feet	do.	E	54	do.	Moderate breeze and cloudy.
25	–	49	1½ miles	3¾ feet	do.	E	50	do.	Moderate & overcast.
26	–	50	300 yards	8 feet	do.	NE	51	12 15 p.m.	Fresh breeze; cloudy
27	–	47	1 mile	3¼ feet	do.	NNE	50	Noon	do.
28	–	50	300 yards	10 feet	Flood	NE	51	do.	Fresh breeze; fine.
29	–	55	do.	9 feet	do.	NNE	58	12 15 p.m.	do.
31	–	52	do.	7 feet	do.	NE	55	do.	Moderate and fine.

CARRICKFERGUS DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	–	59	1½ miles	4½ fathoms	Flood	N N E	60	12 20 p.m.	Fine.
2	–	56	1½ miles	3½ fathoms	do.	S W	59	12 15 p.m.	Hazy.
3	–	52	1 mile	3 fathoms	do.	S W	53	Noon	Fresh breeze; cloudy
4	–	53	do.	2¾ fathoms	Ebb	W	58	do.	Moderate & cloudy.
5	–	54	1½ miles	3 fathoms	do.	WSW	58	12 20 p.m.	Squally and rain.
7	–	58	1½ miles	3¼ fathoms	do.	WSW	61	Noon	Light breeze; fine.
8	–	55	300 yards	8 feet	do.	N	57	do.	Fresh breeze; fine.
9	–	57	1¼ miles	3 fathoms	do.	N W	59	12 20 p.m.	do.
10	–	55	1 mile	do.	do.	N	57	12 30 p.m.	do.
11	–	56	300 yards	9 feet	do.	N	58	Noon	Light breeze; fine.
12	–	55	1½ miles	5 fathoms	Flood	W	57	do.	Moderate & cloudy.
14	–	57	1 mile	3 fathoms	do.	WSW	58	do.	do.
15	–	51	200 yards	7 feet	do.	NNW	51	do.	Strong breezes and squally.
16	–	52	1¼ miles	3½ fathoms	do.	N	55	12 15 p.m.	Moderate & cloudy.
17	–	56	1½ miles	do.	do.	N W	60	12 20 p.m.	do.
18	–	54	do.	3¼ fathoms	do.	N	57	12 30 p.m.	do.
19	–	55	1 mile	2½ fathoms	Ebb	N W	57	12 15 p.m.	do.
21	–	54	300 yards	5 feet	do.	NNW	56	Noon	Light airs; cloudy.
22	–	57	do.	6 feet	do.	N W	61	12 30 p.m.	Fresh and cloudy.
23	–	58	1½ miles	3¾ fathoms	do.	W	62	Noon	Moderate & cloudy.
24	–	58	1 mile	3 fathoms	do.	N W	62	do.	Fresh breezes.
25	–	57	1½ miles	4 fathoms	do.	E	62	12 15 p.m.	Light breezes.
26	–	58	300 yards	8 feet	Flood	N W	64	Noon	Moderate breezes.
28	–	60	1¼ miles	3½ fathoms	do.	N W	62	12 15 p.m.	do.
29	–	60	1½ miles	3¼ fathoms	do.	E	62	12 20 p.m.	Moderate breezes; fine.
30	–	60	1 mile	3 fathoms	do.	E	62	Noon	do.
July.									
1	–	61	1½ miles	3¼ fathoms	Flood	E	64	12 20 p.m.	Moderate and fine.
2	–	61	1½ miles	do.	do.	E S E	65	Noon	Moderate and hazy.
3	–	64	1½ miles	4½ fathoms	do.	E S E	67	12 40 p.m.	Moderate and fine.
5	–	63	300 yards	6 feet	Ebb	S W	67	12 15 p.m.	Moderate and rain.
6	–	62	1 mile	3 fathoms	do.	WSW	67	12 30 p.m.	Moderate & cloudy.
7	–	60	300 yards	9 feet	do.	S	67	12 20 p.m.	Fresh breeze; cloudy
8	–	62	do.	9½ feet	do.	S	64	12 15 p.m.	Strong breeze; rain.
9	–	60	250 yards	8 feet	do.	S W	65	12 40 p.m.	Do. cloudy.
10	–	60	1¼ miles	3½ fathoms	do.	S W	67	Noon	Moderate breeze; cloudy.
12	–	62	1 mile	3 fathoms	Flood	W	68	do.	Light breeze; cloudy
13	–	59	1½ miles	4½ fathoms	do.	N W	63	12 20 p.m.	Moderate & cloudy.
14	–	60	300 yards	10 feet	do.	W	67	12 30 p.m.	Strong breeze ; do.
15	–	64	1½ miles	4 fathoms	do.	W	69	Noon	Light breeze; fine.
16	–	60	250 yards	7 feet	do.	E	62	do.	Fresh do. ; thick fog
17	–	66	2 miles	6 fathoms	do.	E	68	12 20 p.m.	Moderate and fine.
19	–	60	1¼ miles	3 fathoms	Ebb	E	64	12 15 p.m.	do.
20	–	–	—	—	—	–	–	—	
21	–	64	1 mile	2½ fathoms	Ebb	S	68	Noon	Moderate and fine.
22	–	–	—	—	—	–	–	—	
23	–	62	300 yards	10 feet	Ebb	S	66	Noon	Fresh breezes; rain.
24	–	60	1¼ miles	3½ fathoms	do.	W	65	do.	do.
26	–	62	1½ miles	4½ fathoms	Flood	N W	65	do.	Light breeze; cloudy
27	–	62	1¼ miles	3 fathoms	do.	E by N	64	do.	do.
28	–	64	1 mile	2½ fathoms	do.	S E	68	do.	Moderate breeze and hazy.
29	–	64	300 yards	8 fathoms	do.	S	65	do.	Strong breeze; rain.
30	–	61	1¼ miles	3 fathoms	do.	S	67	do.	Moderate do. stormy
31	–	63	1 mile	2½ fathoms	do.	S	66	do.	Do. fine.

Rathmullen Division.—Sheephaven Station, Co. Donegal.

Taken by William Boyd, Comd. Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Feet.			°		
10	–	49	—	2	Flood	N	52	Noon	Frost in the mornings.
11	–	49	—	2½	do.	NW	52	11 45 a.m.	
12	–	50	—	2	Low water	NW	53	Noon	
13	–	50	—	3	Ebb	NW	52	do.	
14	–	49	—	2	do.	E	48	do.	
15	–	48	—	3	do.	E	46	do.	
17	–	48	—	3	do.	S E	50	do.	
18	–	49	—	2½	do.	N E	52	11 40 a.m.	
19	–	49	—	3	do.	N E	51	Noon	
20	–	49	—	2	Flood	N	51	12 20 p.m.	
21	–	50	—	3	do.	N E	52	Noon	
22	–	50	—	3	do.	N E	52	do.	
24	–	53	—	2	do.	S	56	11 40 a.m.	
25	–	51	—	3	do.	S E	52	Noon	
26	–	50	—	2	Low water	S E	51	do.	
27	–	48	—	2	Ebb	S E	50	do.	
28	–	49	—	3	do.	S E	51	11 30 a.m.	
29	–	51	—	2	do.	N	52	do.	
31	–	52	—	2	do.	NW	53	Noon	
June.									
1	–	52	—	2	Ebb	W	54	Noon	
2	–	52	—	2	do.	NW	55	do.	
3	–	53	—	2	High water	WNW	55	do.	
4	–	54	—	2	Flood	W	55	do.	
5	–	54	—	2	do.	W	55	do.	
7	–	55	—	2	do.	W	56	do.	
8	–	55	—	2	do.	W	56	do.	
9	–	57	—	2	do.	W	58	do.	
10	–	56	—	3	do.	N N E	57	do.	
11	–	56	—	2	Low water	N N E	57	do.	
12	–	54	—	2	Ebb	N E	56	do.	
14	–	54	—	3	do.	W	56	do.	
15	–	53	—	2½	do.	N N E	56	do.	
16	–	56	—	2	do.	W	58	do.	
17	–	58	—	3	do.	W	58	do.	
18	–	55	—	2	High water	NW	60	do.	
19	–	58	—	2	Flood	N	60	do.	
21	–	59	—	2	do.	NNW	60	do.	
22	–	61	—	2	do.	NNW	62	do.	
23	–	62	—	2	do.	NNW	64	do.	
24	–	64	—	3	do.	NW	66	do.	
25	–	66	—	2	Low water	E N E	68	do.	
26	–	66	—	2	Ebb	N E	68	do.	
28	–	67	—	2	do.	N E	70	do.	
29	–	68	—	3	do.	N E	70	do.	
30	–	68	—	2	do.	E N E	71	do.	

RATHMULLEN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°		Feet.			°		
1	–	68	—	2	Ebb	E	70	Noon	
2	–	69	—	3	do.	N E	70	do.	
3	–	69	—	2	High water	E	70	do.	
5	–	66	—	3	Flood	SW	68	do.	Rain.
6	–	67	—	2	do.	W	69	do.	
7	–	68	—	2	do.	S	70	do.	
8	–	70	—	2	do.	SW	72	do.	
9	–	70	—	2	do.	W	73	do.	[rain.
10	–	68	—	2	Low water	W	70	do.	Strong breezes and
12	–	67	—	2	Ebb	WNW	69	do.	do.
13	–	66	—	2	do.	WNW	66	do.	do.
14	–	65	—	2	do.	WNW	66	do.	
15	–	67	—	2	do.	WNW	68	do.	
16	–	68	—	2	do.	N E	70	do.	
17	–	70	—	2	High water	W	74	11 40 a.m.	
19	–	70	—	2	Flood	N E	73	11 30 a.m.	
20	–	71	—	2	do.	N E	74	Noon	
21	–	72	—	2	do.	S	75	do.	[showery.
22	–	70	—	2	do.	SW	73	do.	Strong breezes and
23	–	69	—	2	do.	WSW	71	do.	do.
24	–	71	—	2	Low water	SW	73	do.	
26	–	73	—	2	Ebb	NW	76	do.	
27	–	73	—	2	do.	W	75	do.	Rain.
28	–	72	—	2	do.	WNW	74	do.	do.
29	–	70	—	2	do.	SW	72	do.	do.
30	–	68	—	2	do.	W	70	do.	[showery.
31	–	66	—	2	do.	W	68	do.	Strong breezes and

CARN DIVISION.—WATCH VESSEL, No. 39, OFF MOVILLE STATION, CO. DONEGAL.

Taken by DAVID WALLIS, Chief Boatman.

May.				Fathoms.				
10	–	43	300 yards	3	Ebb	N	41	Noon
11	–	49	do.	$2\frac{3}{4}$	do.	NW	48	12 30 p.m.
12	–	43	do.	3	do.	NW	56	Noon
13	–	44	do.	3	do.	S E	56	do.
14	–	44	do.	$3\frac{1}{4}$	do.	S S E	53	do.
15	–	44	do.	4	do.	S S E	44	do.
17	–	44	do.	$3\frac{3}{4}$	do.	S S E	47	do.
18	–	44	do.	$3\frac{1}{2}$	Flood	E	46	do.
19	–	44	do.	$3\frac{1}{4}$	do.	N	45	do.
20	–	44	do.	$3\frac{1}{4}$	do.	N	44	do.
21	–	46	do.	$3\frac{1}{4}$	do.	N N E	48	do.
22	–	46	do.	3	do.	N N E	47	do.
24	–	46	do.	$2\frac{1}{2}$	Low water	E S E	48	do.
25	–	41	do.	3	Ebb	E S E	43	do.
26	–	45	do.	3	do.	E S E	47	do.
27	–	39	do.	3	do.	E by N	40	do.
28	–	44	do.	$3\frac{1}{2}$	do.	N E	51	do.
29	–	45	do.	$3\frac{1}{4}$	do.	N by E	48	do.
31	–	45	do.	$3\frac{1}{2}$	do.	N N E	59	do.

CARN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°		Fathoms.			°		
1	–	45	300 yards	3½	Ebb	WSW	59	Noon	
2	–	47	do.	3¼	do.	W	52	do.	
3	–	46	do.	3¼	do.	WNW	46	do.	
4	–	47	do.	3¼	do.	NNW	52	do.	
5	–	48	do.	3¼	do.	W	54	do.	
7	–	49	do.	3¼	do.	W	55	do.	
8	–	49	do.	3¼	do.	N	50	do.	
9	–	49	do.	3	Low water	NW	50	do.	
10	–	41	do.	2¾	Ebb	N	48	do.	
11	–	50	do.	3	do.	N	56	do.	
12	–	50	do.	3½	do.	W	48	do.	
14	–	50	do.	3¼	do.	SW	56	do.	
15	–	50	do.	3½	do.	N	53	do.	
16	–	48	do.	3⅜	do.	N	59	1 p.m.	
17	–	50	do.	3¼	Flood	Calm	67	Noon	
18	–	50	do.	3¼	do.	N	55	do.	
19	–	50	do.	3½	do.	N	53	do.	
21	–	51	do.	3	do.	N	57	do.	
22	–	51	do.	2¾	do.	N	54	do.	
23	–	52	do.	3	do.	NNW	59	do.	
24	–	52	do.	3	Ebb	SE	66	do.	
25	–	52	do.	3	do.	E	77	do.	
26	–	59	do.	3	do.	ESE	66	do.	
28	–	53	do.	3¼	do.	N	64	do.	
29	–	58	do.	3½	do.	NNE	63	do.	
30	–	58	do.	3½	do.	N	61	do.	
July.									
1	–	54	300 yards	3¾	High water	SE	60	Noon	
2	–	56	do.	3¾	Flood	SE	65	do.	
3	–	56	do.	3½	do.	SE	59	do.	
5	–	57	do.	3¼	do.	WSW	60	do.	
6	–	61	do.	3	do.	WNW	64	do.	
7	–	57	do.	3	do.	SW	63	do.	
8	–	63	do.	3	Ebb	WSW	63	do.	
9	–	54	do.	3	do.	W	59	do.	
10	–	56	do.	3	do.	WNW	60	do.	
12	–	59	do.	3	do.	WNW	64	do.	
13	–	52	do.	3¼	do.	NW	57	do.	
14	–	52	do.	3½	do.	WNW	55	do.	
15	–	54	do.	3⅜	do.	W	64	do.	
16	–	57	do.	3¾	Flood	ESE	69	do.	
17	–	57	do.	3½	do.	E	72	do.	
19	–	58	do.	3¼	do.	NE	68	do.	
20	–	65	do.	3	do.	Calm	86	do.	
21	–	59	do.	2¾	Low water	WSW	63	do.	
22	–	58	do.	2⅜	Ebb	SW	63	do.	
23	–	59	do.	3	do.	WSW	68	do.	
24	–	57	do.	3	do.	W	58	do.	
26	–	57	do.	3	do.	NW	62	do.	
27	–	55	do.	3½	do.	WSW	52	do.	
28	–	56	do.	3	do.	N	67	do.	
29	–	61	do.	3½	do.	S	51	do.	
30	–	55	do.	3¼	do.	W	59	do.	
31	–	54	do.	3½	High water	SW	54	do.	

Rutland Division.—Rutland Station, Co. Donegal.

Taken by E. Codrington Ball, Divisional Officer, and M. M'Carthy, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Feet.			°		
10	–	48	—	4	Low water	N N W	50	11 45 a.m.	
11	–	48	—	5	do.	N W	50	12 15 p.m.	
12	–	49	—	6	Flood	N W	50	11 30 a.m.	
13	–	51	—	6	do.	N	56	Noon	
14	–	52	—	5	do.	S E	56	do.	
15	–	49	—	7	do.	S S E	47	do.	
17	–	48	—	7	do.	S E	50	12 30 p.m.	
18	–	49	—	5	High water	S E	50	12 45 p.m.	
19	–	49	—	8	Flood	N E	50	11 45 a.m.	
20	–	50	—	8	do.	N	52	Noon	
21	–	50	—	6	do.	N E	50	do.	
22	–	49	—	6	do.	N E	51	12 45 p.m.	
24	–	50	—	5	do.	E N E	51	1 p.m.	
25	–	51	—	4	Low water	E	52	12 45 p.m.	
26	–	50	—	4	Ebb	E	52	Noon	
27	–	49	—	5	do.	E N E	48	12 30 p.m.	
28	–	50	—	6	do.	E	56	1 p.m.	
29	–	50	—	4	do.	E	54	12 45 p.m.	
31	–	49	—	6	do.	N E	56	1 p.m.	
June.									
1	–	51	—	6	Ebb	S E	56	Noon	
2	–	52	—	6	High water	N W	56	do.	
3	–	52	—	6	do.	N W	54	1 p.m.	
4	–	54	—	4	Flood	N	56	12 30 p.m.	
5	–	54	—	6	do.	S W	58	Noon	
7	–	54	—	5	do.	S W	57	12 15 p.m.	
8	–	55	—	6	do.	S E	58	Noon	
9	–	55	—	5	do.	N N W	57	12 15 p.m.	
10	–	54	—	4	Low water	N W	54	Noon	
11	–	56	—	5	do.	N	60	1 p.m.	
12	–	54	—	6	Ebb	W S W	52	Noon	
14	–	53	—	6	do.	N W	54	do.	
15	–	53	—	6	do.	N	56	do.	
16	–	54	—	7	do.	W S W	57	1 p.m.	
17	–	54	—	6	do.	W S W	58	Noon	
18	–	55	—	7	High water	N W	58	do.	
19	–	56	—	6	do.	N	58	1 p.m.	
21	–	56	—	6	Flood	N	59	12 30 p.m.	
22	–	57	—	6	do.	N	59	do.	
23	–	57	—	7	do.	N	58	Noon	
24	–	58	—	7	Low water	N	60	do.	
25	–	59	—	5	do.	N W	64	do.	
26	–	59	—	4	Flood	N	65	1 p.m.	
28	–	59	—	6	do.	N E	65	Noon	
29	–	59	—	6	do.	N E	65	12 30 p.m.	
30	–	60	—	7	do.	N E	65	1 p.m.	

RUTLAND DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°		Feet.			°		
1	–	60	—	7	High water	N E	64	Noon	
2	–	61	—	7	do.	N	64	12 30 p.m.	
3	–	61	—	6	Flood	S W	63	Noon	
5	–	62	—	6	do.	N	64	1 p.m.	
6	–	61	—	6	do.	S W	63	1 p.m.	
7	–	62	—	5	do.	S W	64	12 30 p.m.	
8	–	61	—	6	Ebb	S W	64	Noon	
9	–	61	—	4	Low water	S W	64	12 30 p.m.	
10	–	64	—	5	do.	S W	66	1 p.m.	
12	–	64	—	5	Ebb	S W	64	Noon	
13	–	60	—	4	do.	N W	64	1 p.m.	
14	–	59	—	6	do.	W	62	Noon	
15	–	59	—	7	do.	N W	61	1 30 p.m.	
16	–	62	—	8	Flood	W	64	Noon	
17	–	64	—	8	High water	S W	65	12 30 p.m.	
19	–	65	—	7	Flood	N E	66	11 a.m.	
20	–	65	—	6	do.	N E	66	Noon	
21	–	64	—	5	do.	N	65	do.	
22	–	65	—	4	do.	S W	66	1 p.m.	
23	–	64	—	4	Low water	W	66	Noon	
24	–	64	—	5	do.	W	65	1 p.m.	
26	–	65	—	6	Ebb	S W	66	12 15 p.m.	
27	–	65	—	7	do.	S W	66	1 15 p.m.	
28	–	64	—	7	do.	W	65	Noon	
29	–	64	—	6	do.	S S W	64	12 30 p.m.	
30	–	65	—	7	High water	W	64	Noon	
31	–	64	—	7	do.	W	65	1 p.m.	

BELMULLET DIVISION.—BALLYGLASS STATION, CO. MAYO.

Taken by JAMES MORGAN, Chief Boatman.

June.				Fathoms.					
8	55	58	440 yards.	6 and 1	Flood	N E	76	11 45 a.m.	Moderate breezes and cloudy.
9	58	58	do.	6 „ 1	do.	N E	62	11 50 a.m.	do.
10	58	58	do.	5½ „ 1	do.	N E	62	Noon	do.
11	55	56	do.	6 „ 1	do.	N	60	11 45 a.m.	do.
12	55	56	do.	6 „ 1	do.	W	60	do.	Do. and hazy.
14	54	56	do.	6 „ 1	Ebb	NW	61	11 35 a.m.	Strong do.
15	56	56	do.	7 „ 2½	do.	NW	59	11 40 a.m.	Do. do.
16	56	56	do.	6 „ 2	do.	N	66	do.	Moderate breezes and cloudy.
17	55	58	do.	7 „ 1	do.	NW	63	do.	Do. and rain.
18	54	57	do.	6 „ 1	Flood	NW	62	do.	Do. and hazy.
19	55	56	do.	5 „ 1	do.	N	60	11 50 a.m.	Do. do.
21	58	57	do.	5 „ 1	do.	N E	62	11 45 a.m.	Do. do.
22	55	57	do.	6 „ 1	do.	NW	63	11 50 a.m.	Do. and cloudy.
23	55	55	do.	5 „ 1	do.	W by N	62	11 45 a.m.	Do. do.
24	58	59	do.	6 „ 1	Low water	SW	64	11 40 a.m.	Do. do.
25	59	59	do.	6 „ 1	Flood	SW	72	Noon	Do. do.
26	58	61	do.	5 „ 1	do.	N	67	do.	Do. do.
28	58	55	do.	6 „ 1	Ebb	N E	64	11 50 a.m.	Do. do.
29	58	60	do.	6 „ 1	do.	N E	66	11 50 a.m.	Do. and clear.
30	58	61	do.	5 „ 1	do.	N E	71	11 45 a.m.	Do. do.

BELMULLET DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°		Fathoms.			°		
1	58	57	¼ of a mile.	6 and 1	Ebb	N E	72	11 50 a.m.	Light breezes & clear
2	58	57	do.	5½ „ 1	do.	N	84	11 45 a.m.	Do. do.
3	63	62	do.	5 „ 1	Flood	N	78	do.	Do. do.
5	61	60	do.	5 „ 1	do.	SW	65	do.	Fresh do. cloudy.
6	58	65	do	5½ „ 1	do.	SW	72	11 50 a.m.	Do. do.
7						SSW	63	Noon	
8	—	—	—	—	—	SW	64	do.	Fresh gales and squally.
9						WSW	63	do.	
10	56	58	¼ of a mile.	5½ „ 1	Low water	WSW	66	11 50 a.m.	Fresh breezes, &c.
12	60	58	do.	6 „ 1	do.	W by N	67	Noon	Moderate do.
13	59	60	do.	6 „ 1	Last qr. ebb	W	66	do.	Do. do.
14	58	60	do.	5½ „ 1	do.	W	64	do.	Fresh breezes & hazy.
15	62	61	do.	5 „ 1	do.	W	63	11 50 a.m.	Light do.
16	63	64	do.	5½ „ 1	High water	W	74	11 45 a.m.	Do. do.
17	61	62	do.	6 „ 1	do.	W	70	Noon	Do. do.
19	60	62	do.	6 „ 1	Ebb	N E	70	do.	Do. do.
20	60	62	do.	5½ „ 1	do.	W	71	do.	Fresh breezes and cloudy
21	61	63	do.	5 „ 1	do.	S	70	do.	Strong winds and squally.
22	60	62	do.	5½ „ 1	Low water	SW	66	do.	Fresh winds & rain.
23	60	62	do.	6 „ 1	do.	SW	68	do.	Do. cloudy.
24	60	62	do.	5 „ 1	do.	W	68	do.	Do. do.
26	62	62	do.	5 „ 1	do.	W	68	do.	Light do.
27	60	62	do.	5 „ 1	Ebb	W	64	do.	Do. do.
28	60	61	do.	6 „ 1	do.	SW	71	do.	Do. do.
29	60	61	do.	6 „ 1	do.	SW	71	do.	Strong winds & hazy
30	60	60	do.	6 „ 1	do.	SW	63	do.	Light do.
31	60	60	do.	6 „ 1	do.	W	64	do.	Strong winds and squally.

WESTPORT DIVISION.—PIGEON POINT STATION, CO. MAYO.

Taken by WILLIAM JOHN, Chief Boatman.

May.				Fathoms.					
10	–	52	1 mile	3	Flood	N N E	55	Noon	Fresh and cloudy.
11	–	53	½ mile	2½	do.	N	53	1 p.m.	Fresh and squally.
12	–	52	300 yards	2	do.	N N W	51	12 20 p.m.	do.
13	–	53	400 yards	2½	do.	E S E	60	2 p.m.	Moderate and clear.
14	–	52	880 yards	2	Ebb	S E	56	Noon.	Fresh and clear.
15	–	51	200 yards	2½	do.	S E	52	12 35 p.m.	Fresh with rain.
17	–	52	1 mile	17	do.	E	53	1 15 p.m.	do.
18	–	52	300 yards	2	do.	E	54	12 10 p.m.	Moderate and cloudy
19	–	52	200 yards	2	do.	N	50	1 p.m.	Fresh and squally.
20	–	52	100 yards	1½	do.	N	57	1 p.m.	Moderate and fine.
21	–	53	400 yards	3	High water	N	56	Noon.	Moderate and cloudy
22	–	53	1 mile	4	Flood	W	56	1 40 p.m.	Light and fine.
24	–	55	100 yards	1	do.	S E	56	2 30 p.m.	Fresh and cloudy.
25	–	54	300 yards	2	do.	S E	55	12 15 p.m.	Fresh with rain.
26	–	53	200 yards	1½	do.	E	51	Noon.	do.
27	–	50	400 yards	2½	do.	E	46	1 p.m.	Fresh and cloudy.
28	–	53	100 yards	1½	do.	E	51	2 15 p.m.	do.
29	–	54	880 yards	2½	Ebb	W	59	12 30 p.m.	Light blue, clear.
31	–	55	200 yards	2	do.	N W	56	Noon.	Moderate and cloudy

WESTPORT DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°		Fathoms			°		
1	–	56	400 yards	3	Ebb	W	58	1 p.m.	Fresh and showers.
2	–	56	1 mile	3½	do.	NW	56	Noon.	do.
3	–	56	100 yards	1	do.	W	57	12 40 p.m.	Fresh and cloudy.
4	–	56	200 yards	2	do	WNW	59	2 30 p.m.	Moderate and fine.
5	–	57	250 yards	2½	do.	W	59	1 15 p.m.	Fresh and hazy.
7	–	59	1 mile	3½	Flood	NW	61	12 10 p.m.	Moderate and fine.
8	–	63	300 yards	2	High water	E	60	4 p.m.	do.
9	–	63	400 yards	3	Flood	N E	62	Noon.	Light and clear.
10	–	62	120 yards	1½	Low water	N N E	58	12 25 p.m.	Moderate and fine.
11	–	64	½ mile	2	do.	N E	57	1 p.m.	Light and cloudy.
12	–	63	200 yards	2½	Flood	W	62	2 p.m.	do.
14	–	59	1 mile	4	Ebb	W	59	12 30 p.m.	Stormy and showers.
15	–	63	400 yards	2½	Flood	NW	60	2 30 p.m.	Moderate and clear.
16	–	63	100 yards	1½	Ebb	N	59	12 10 p.m.	Light and cloudy.
17	–	63	½ mile	2½	do.	N	60	Noon.	Light and hazy.
18	–	58	300 yards	3	do.	WNW	62	1 15 p.m.	Moderate and cloudy
19	–	60	120 yards	4	High water	NNW	59	Noon.	Light and hazy.
21	–	58	420 yards	3	Flood	N	60	2 p.m.	do.
22	–	57	90 yards	1½	do.	N	59	12 30 p.m.	Moderate and cloudy
23	–	59	1 mile	4	do.	W	61	1 p.m.	Moderate and fine.
24	–	60	100 yards	2	do.	NW	63	1 15 p.m.	do.
25	–	61	200 yards	2½	Low water	WNW	64	Noon.	do.
26	–	67	½ mile	3	Flood	WNW	68	1 40 p.m.	Light and fine.
28	–	65	300 yards	2	Ebb	N E	72	12 30 p.m.	do.
29	–	66	60 yards	1½	Flood	N E	70	2 p.m.	do.
30	–	66	130 yards	3	Ebb	N E	72	Noon.	do.
July.									
1	–	65	200 yards	2½	Ebb	N E	73	12 20 p.m.	Light and fine.
2	–	66	880 yards	3	do.	WNW	72	1 15 p.m.	do.
3	–	66	90 yards	1½	do.	WNW	71	Noon.	do.
5	–	65	400 yards	3½	do.	NW	66	1 p.m.	Fresh and squally.
6	–	65	100 yards	1½	do.	WNW	66	2 p.m.	Moderate and cloudy
7	–	65	1 mile	4	Flood	W	67	Noon.	Strong and squally.
8	–	65	300 yards	3	do.	W	65	1 p.m.	do.
9	–	63	120 yards	2½	do.	WNW	67	1 30 p.m.	do.
10	–	63	880 yards	3½	do.	W	66	12 30 p.m.	Moderate and fine.
12	–	65	80 yards	1½	do.	W	64	2 p.m.	Fresh and cloudy.
13	–	63	400 yards	1	Low water	NW	64	1 p.m.	Moderate and hazy.
14	–	62	230 yards	3	Ebb	WNW	63	Noon.	Fresh and hazy.
15	–	62	1 mile	4½	do.	WNW	67	12 10 p.m.	Light and fine.
16	–	64	100 yards	2½	do.	N	78	Noon.	do.
17	–	64	400 yards	3½	do.	NNW	66	do.	Light and hazy.
19	–	67	880 yards	3	Flood	S E	75	12 20 p.m.	Light and fine.
20	–	67	300 yards	2	High water	S	77	Noon.	do.
21	–	68	130 yards	2½	Flood	SSW	72	2 p.m.	Fresh and squally.
22	–	66	1 mile	4½	do.	S	65	Noon.	Moderate & showers.
23	–	65	220 yards	3	do.	NW	66	do.	Fresh and cloudy.
24	–	64	400 yards	3½	do.	W	65	12 20 p.m.	do.
26	–	64	200 yards	1½	Low water	NW	63	12 30 p.m.	do.
27	–	64	90 yards	1½	Ebb	NW	66	Noon.	do.
28	–	64	880 yards	2½	Low water	NW	66	1 p.m.	do.
29	–	62	300 yards	3	Ebb	NW	62	12 15 p.m.	Strong and squally.
30	–	62	100 yards	2	do.	W	64	12 30 p.m.	Strong and rain.
31	–	63	200 yards	3	do.	W	65	2 p.m.	Strong and squally.

Westport Division.—Innislyre Station, Co. Mayo.

Taken by Charles Thomas, Chief Boatman.

1869.	Temperature. A. At Sea	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Fathoms.			°		
10	–	53	¼ mile	2½	Flood	N	54	Noon	Fresh breeze, cloudy.
11	–	53	300 yards	2½	do.	NNW	54	1 p.m.	Fresh breeze, rainy.
12	–	53	do.	2½	do.	NNW	53	12 30 p.m.	Moderate do., cloudy
13	–	54	440 yards	2½	do.	E S E	56	11 a.m.	do.
14	–	54	100 yards	2½	Low water	E S E	56	Noon	Strong breeze, cloudy
15	–	52	200 yards	2½	Ebb	S E	50	do.	Strong breeze, rain.
17	–	53	440 yards	3	do.	E S E	52	do.	Fresh breeze, rain.
18	–	52	880 yards	2½	do.	E N E	54	11 a.m.	Moderate breeze, do.
19	–	51	440 yards	3	High water	N.	57	11 30 a.m.	Strong breeze, rain.
20	–	53	300 yards	2½	do.	N	56	Noon	Moderate & cloudy.
21	–	52	440 yards	4	Ebb	N E	56	2 p.m.	do.
22	–	53	do.	4	Flood	N W	55	Noon	Light breeze, cloudy.
24	–	53	300 yards	3	do.	S E	55	do.	Strong breeze, do.
25	–	53	do.	3	do.	S E	56	do.	Fresh breeze, rain.
26	–	54	do.	3	do.	E S E	57	do.	Fresh breeze, cloudy.
27	–	52	do.	3	Low water	E	50	do.	do.
28	–	54	do.	3	Ebb	E N E	56	do.	Moderate breeze, do.
29	–	54	do.	3	do.	N E	67	do.	Light breeze, do.
31	–	52	440 yards	5	do.	N W	59	do.	Moderate breeze, do.
June.			Yards.						
1	–	53	440	5	Ebb	W N W	60	Noon	Moderate and hazy.
2	–	53	300	5	High water	N	59	do.	Light breezes, rain.
3	–	53	440	4	do.	W	59	12 40 p.m.	Strong breezes, do.
4	–	55	300	3	Flood	W	60	Noon	Light breezes, hazy.
5	–	56	300	3	do.	W S W	68	do.	Moderate and hazy.
7	–	59	300	3	do.	W S W	66	do.	Light breezes, rain.
8	–	59	300	4	do.	E	66	do.	Light breezes, cloudy
9	–	59	440	4	do.	N E	62	do.	Moderate breezes, do.
10	–	59	300	3	do.	N E	66	do.	do.
11	–	60	440	4	Low water	N E	64	do.	Moderate do., hazy
12	–	60	300	3½	do.	S W	66	do.	Fresh breezes, rain.
14	–	58	300	3	Ebb	S W	63	do.	do.
15	–	58	400	4	do.	N	62	do.	do.
16	–	58	300	4	do.	S W	58	do.	Fresh breezes, cloudy
17	–	60	400	3	do.	N	60	do.	Moderate breezes, do.
18	–	60	300	3½	do.	N W	62	do.	do.
19	–	61	400	4	Flood	N N E	62	do.	Fresh breezes, hazy.
21	–	60	300	4	do.	N	62	do.	Moderate breezes, do.
22	–	58	300	3½	do.	N	62	do.	do.
23	–	58	400	4	do.	W N W	62	1 30 p.m.	do.
24	58	–	440	7	do.	W N W	62	12 30 p.m.	do.
25	–	60	300	5	do.	N	70	1 p.m.	do. cloudy.
26	–	59	400	4	Ebb	N	70	11 a.m.	do. hazy.
28	–	60	440	3½	do.	E	77	Noon	Light breezes, cloudy
29	59	–	880	7	do.	N E	78	do.	do.
30	–	60	300	3	do.	E	82	do.	do.

Westport Division, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°	Yards.	Fathoms.			°		
1	–	63	440	3½	Ebb	N E	84	Noon	Light airs & cloudy.
2	–	63	440	3½	do.	N W	84	do.	do.
3	–	62	300	3	High water	W N W	76	do.	Fresh breezes, do.
5	–	62	400	4	Flood	S W	66	do.	Strong breezes, rain.
6	–	62	400	3½	do.	N W	67	do.	Moderate do. cloudy,
7	–	63	300	3	do.	S W	74	do.	Strong breezes, rain.
8	–	62	400	3	do.	W S W	74	do.	do.
9	–	62	400	3	do.	W S W	78	do.	Strong gales, cloudy.
10	–	62	300	3½	do.	W N W	68	do.	Moderate breezes, do.
12	–	61	400	5	Low water	N W	67	do.	Fresh breezes, cloudy
13	–	61	400	5	Flood	N W	67	2 p. m.	Moderate do., rain.
14	–	61	400	6	Ebb	W	66	Noon	Fresh breezes, do.
15	–	62	880	4	do.	N W	68	do.	Moderate do., fog.
16	–	63	400	5	do.	N E	78	do.	Light airs, cloudy.
17	–	63	400	3½	do.	N W	78	do.	do.
19	–	64	440	4	Flood	S E	84	do.	do.
20	–	64	440	4	do.	S E	88	do.	do.
21	–	64	400	3½	do.	S	84	do.	Fresh airs, cloudy.
22	–	64	400	4	do.	S W	78	do.	Strong airs, rain.
23	–	64	440	5	do.	S W	76	do.	Fresh airs, rain.
24	–	64	440	3½	do.	S W	78	do.	Moderate do. cloudy.
26	–	63	400	5	Ebb	W N W	72	11 20 a.m.	do.
27	–	64	440	4	do.	W N W	78	Noon	do.
28	–	63	400	3½	do.	W N W	76	do.	do.
29	–	63	300	3	do.	W S W	76	do.	Fresh gales, rain.
30	–	63	400	4	do.	S W	76	do.	Strong breezes, rain.
31	–	62	400	3½	do.	W S W	60	12 30 p.m.	do.

Westport Division.—Innisgowla Station, Co. Mayo.

Taken by William Bubb, Chief Boatman.

May.									
				Fathoms.					
10	52	52	½ and ¼ mile	1⅓ and 5	Flood	NW	59	Noon	Temperature taken on the several oyster beds within the limits of this station.
11	52	52	do.	2 ,, 5	do.	N	57	do.	
12	52	52	½ & 200 yds.	1½ ,, 11	Low water	W	58	do.	
13	52	52	¼ ,, 100 ,,	10 ,, 1	do.	E S E	60	1 p.m.	
14	52	53	½ ,, ¼ mile	6 ,, 1	Ebb	E S E	59	do.	
15	52	52	¼ ,, 100 yds.	7 ,, 1½	do.	E	54	do.	
17	52	51	½ ,, 100 ,,	6 ,, 2	do.	E	53	do.	
18	52	52	½ ,, 200 ,,	6 ,, 2	do.	N E	59	do.	
19	52	51	¼ ,, 200 ,,	5 ,, 1½	High water	N N E	50	do.	
20	52	52	½ ,, 150 ,,	6 ,, 3	do.	NNW	55	do.	
21	52	52	½ ,, 200 ,,	11 ,, 3	Flood	NNE	54	do.	
22	52	52	¼ ,, 150 ,,	7 ,, 2½	do.	N	55	do.	
24	52	53	¼ ,, 200 ,,	6 ,, 3	do.	S E	55	do.	
25	53	53	½ ,, ¼ mile	7 ,, 3	do.	E S E	56	do.	
26	53	53	do.	6 ,, 2	do.	S E	54	do.	
27	52	51	¾ ,, ¼ mile	7 ,, 2	Low water	E N E	49	do.	
28	52	52	¾ ,, ¼ ,,	6 ,, 3	Ebb	N E	55	do.	
29	52	52	½ ,, ¼ ,,	10 ,, 2	do.	N E	60	do.	
31	53	54	do.	6 ,, 2	do.	W	64	do.	

WESTPORT DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°		Fathoms.			°		
1	54	54	½ and ¼ mile	7 and 3	Ebb	W	60	Noon	Temperature taken on the several oyster beds within the limits of this station.
2	54	55	do.	8 ,, 3½	do.	WNW	57	do.	
3	55	56	do.	6 ,, 4	High water	W	59	do.	
4	55	55	¾ ,, ½ ,,	10 ,, 4	do.	WNW	62	do.	
5	55	56	½ ,, ¼ ,,	7 ,, 3½	Flood	WSW	65	do.	
7	58	59	do.	6 ,, 3	do.	W	64	do.	
8	58	59	¾ ,, ¼ ,,	13 ,, 4	do.	E	69	do.	
9	58	60	do.	8 ,, 4	do.	E	72	do.	
10	59	60	½ ,, ¼ ,,	7 ,, 1½	do.	E	68	do.	
11	59	59	½ ,, 200 yds.	9 ,, 1	Low water	N E	62	do.	
12	59	59	½ ,, ¼ mile	6 ,, 2	Ebb	W	62	do.	
14	58	59	do.	5 ,, 1½	do.	W	58	do.	
15	58	58	¾ ,, ¼ ,,	7 ,, 2	do.	NW	59	do.	
16	57	58	½ ,, ¼ ,,	6 ,, 3	do.	NW	60	do.	
17	57	58	½ ,, ¼ ,,	6 ,, 3½	do.	NW	59	do.	
18	57	58	do.	8 ,, 4	High water	N	62	do.	
19	56	57	do.	10 ,, 3	Flood	N	60	do.	
21	56	57	¾ ,, ¼ ,,	9 ,, 2½	do.	N E	61	do.	
22	57	57	½ ,, ¼ ,,	7 ,, 2	do.	N E	62	do.	
23	56	58	¾ ,, ¼ ,,	8 ,, 1½	do.	W	63	do.	
24	57	59	¾ ,, ¼ ,,	5 ,, 1	do.	W	65	do.	
25	57	59	½ ,, ¼ ,,	6 ,, 1	Low water	W	72	do.	
26	58	60	do.	5 ,, 1	do.	NW	70	do.	
28	60	62	¾ ,, 200 yds.	6 ,, 0¾	Ebb	N	71	do.	
29	60	61	½ ,, ¼ mile	5 ,, 1	do.	N E	70	do.	
30	61	62	½ ,, ¼ ,,	6 ,, 1	do.	N E	76	do.	
July.									
1	62	63	¾ and ¼	5 and 1½	Ebb	E	85	Noon	Temperature taken on the several oyster beds within the limits of this station.
2	62	63	do.	11 ,, 2	do.	SW	75	do.	
3	62	64	½ and ¼	9 ,, 3	High water	N	86	do.	
5	62	63	¾ ,, ¼	10 ,, 2	Flood	WSW	65	do.	
6	62	63	¾ ,, ¼	13 ,, 3½	do.	SW	64	do.	
7	62	63	½ ,, ¼	9 ,, 1½	do.	SW	68	do.	
8	62	63	½ ,, ¼	7 ,, 1	do.	WSW	67	do.	
9	62	63	½ ,, ¼	5 ,, 1	do.	WSW	68	do.	
10	62	63	¾ ,, ¼	7 ,, ½	do.	WSW	68	do.	
12	62	62	½ ,, ¼	5 ,, 1	Ebb	W	66	do.	
13	62	62	do.	6 ,, 1	do.	WNW	65	do.	
14	62	62	do.	5 ,, 1	do.	WSW	63	do.	
15	62	62	¾ and ¼	7 ,, 1	do.	W	64	do.	
16	63	64	¾ ,, ¼	11 ,, 0½	do.	E	80	do.	
17	63	63	½ ,, ¼	7 ,, 2	High water	N E	74	do.	
19	63	63	½ ,, ¼	8 ,, 2½	Flood	N E	82	do.	
20	63	63	¾ ,, ¼	7 ,, 3	do.	N	81	do.	
21	64	65	½ ,, ¼	9 ,, 2	do.	SW	71	do.	
22	64	65	¾ ,, ¼	7 ,, 2	do.	W	66	do.	
23	64	64	½ ,, ¼	6 ,, 1½	do.	W	66	do.	
24	64	64	½ ,, ¼	5 ,, 1½	Low water	WSW	68	do.	
26	63	63	¾ ,, ½	9 ,, 2	Ebb	WNW	66	do.	
27	63	63	¾ ,, ½	6 ,, 1	do.	WNW	69	do.	
28	63	63	½ ,, ¼	7 ,, 1½	do.	W	67	do.	
29	62	62	½ ,, ¼	5 ,, 2	do.	WSW	65	do.	
30	62	62	do.	5 ,, 1	do.	WSW	63	do.	
31	62	62	do.	7 ,, 2½	do.	W	67	do.	

Galway Division.—Ballyvaughan Station, Co. Clare.

Taken by John Connell, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	–	50	500 yards	7 feet	Flood	N	53	Noon	
11	–	51	400 yards	5 feet	do.	NW	55	do.	
12	–	52	300 yards	3 feet	do.	NW	55	do.	
13	–	52	600 yards	4 feet	do.	SSE	59	do.	
14	–	53	550 yards	do.	Ebb	E	58	do.	
15	–	52	250 yards	5 feet	do.	SE	53	do.	
17	–	52	400 yards	6 feet	do.	S	63	do.	
18	–	52	300 yards	do.	do.	NE	50	do.	
19	–	51	200 yards	5 feet	do.	NNE	51	do.	
20	–	51	500 yards	10 feet	do.	NNW	53	do.	
21	–	52	400 yards	do.	High water	WNW	57	do.	
22	52	–	½ mile	9 fathoms	Flood	W	57	do.	
24	–	52	300 yards	6 feet	do.	SE	57	do.	
25	–	52	400 yards	5 feet	do.	E	58	do.	
26	–	53	500 yards	4 feet	do.	E by N	54	do.	
27	–	50	200 yards	3 feet	Low water	E	48	do.	
28	–	51	250 yards	4 feet	Ebb	E	50	do.	
29	–	52	300 yards	5 feet	do.	NNE	58	do.	
31	–	53	400 yards	do.	do.	W	58	do.	
June.									
1	–	54	400 yards	6 feet	Ebb	W by S	68	Noon	
2	–	55	500 yards	8 feet	do.	W	65	do.	
3	–	55	400 yards	do.	do.	W	64	do.	
4	–	55	300 yards	9 feet	High water	SW	61	do.	
5	–	56	600 yards	8 feet	Flood	W	67	do.	
7	–	57	400 yards	6 feet	do.	W	68	do.	
8	–	58	500 yards	7 feet	do.	N	64	do.	
9	–	61	do.	5 feet	do.	NNE	66	do.	
10	–	65	400 yards	4 feet	do.	NE	70	do.	
11	–	58	200 yards	3 feet	do.	ENE	55	do.	
12	–	57	150 yards	do.	Ebb	N	60	do.	
14	–	56	500 yards	5 feet	do.	W	63½	do.	
15	–	55	600 yards	6 feet	do.	NNW	58	do.	
16	–	58	500 yards	8 feet	do.	WNW	68	do.	
17	–	57	400 yards	10 feet	do.	W	60	do.	
18	–	57	do.	11 feet	do.	NW	64	do.	
19	–	58	350 yards	do.	Flood	N	66	do.	
21	–	59	500 yards	6 feet	do.	NW	63	do.	
22	–	58	300 yards	4 feet	do.	N	61	do.	
23	–	58	250 yards	2½ feet	do.	W by W	68	do.	
24	–	61	300 yards	3 feet	do.	N	66	do.	
25	–	62	400 yards	do.	Low water	N	70	do.	
26	–	64	300 yards	3½ feet	Flood	NNE	72	do.	
28	–	64	200 yards	2 feet	Ebb	N	76	do.	
29	–	64	250 yards	4 feet	do.	N	74	do.	
30	–	63	300 yards	3 feet	do.	NE	72	do.	

GALWAY DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	–	64	400 yards	6½ feet	Ebb	N E	73	Noon	
2	–	65	350 yards	7⅓ feet	do.	N	78	do.	
3	–	66	400 yards	9 feet	do.	N	76	do.	
5	–	62	250 yards	8 feet	Flood	S W	70	do.	
6	–	62	500 yards	7½ feet	do.	W	72	do.	
7	–	65	400 yards	6 feet	do.	S W	76	do.	
8	–	64	250 yards	4½ feet	do.	WSW	71	do.	
9	–	66	350 yards	2½ feet	do.	W	66	do.	
10	–	63	450 yards	do.	do.	WSW	74	do.	
12	–	64	do.	2 feet	Low water	WNW	69	do.	
13	–	64	do.	3 feet	Ebb	WNW	69	do.	
14	–	64	400 yards	4 feet	do.	W	76	do.	
15	–	64	300 yards	5 feet	do.	WNW	76	do.	
16	–	65	350 yards	6 feet	do.	N	76	do.	
17	–	65	400 yards	7 feet	do.	N	70	do.	
19	–	66	500 yards	10 feet	High water	N E	77	do.	
20	–	67	300 yards	9 feet	Flood	N E	84	do.	
21	–	66	350 yards	8 feet	do.	S W	74	do.	
22	–	64	450 yards	6⅓ feet	do.	S W	72	do.	
23	–	65	400 yards	5 feet	do.	S W	71	do.	
24	–	65	300 yards	3 feet	do.	S W	68	do.	
26	–	64	250 yards	2⅓ feet	Low water	N W	69	do.	
27	–	64	400 yards	3 feet	Ebb	W	70	do.	
28	–	64	do.	2 feet	do.	W	70	do.	
29	–	63	300 yards	4 feet	do.	WSW	68	do.	
30	–	62	350 yards	5⅓ feet	do.	WSW	67	do.	
31	–	63	450 yards	7 feet	do.	W by S	67	do.	

BALLYHEIGE DIVISION.—BALLYHEIGE STATION, CO. KERRY.

Taken by JOHN WILMOT, Chief Boatman.

May.									
10	–	52	Taken from	1 Foot	Flood.	S E	48	Noon	—
11	–	56	the shore.	do.	do.	N	50	do.	Light breeze.
12	–	61	do.	do.	Low water	N	56	do.	Moderate.
13	–	59	do.	do.	Ebb.	E S E	54	do.	Fresh.
14	–	58	do.	do.	do.	E	53	do.	Strong breeze.
15	–	56	do.	do.	do.	S E	51	do.	Moderate.
17	–	57	do.	do.	do.	W	54	do.	Light.
18	–	58	do.	do.	do.	N W	53	do.	Moderate.
19	–	50	do.	do.	do.	N W	47	do.	Fresh.
20	–	55	do.	do.	High water	N W	52	do.	Light.
21	–	57	do.	do.	Flood.	N W	54	do.	Moderate.
22	–	60	do.	do.	do.	N W	56	do.	do
24	–	69	do.	do.	do.	W	55	do.	do.
25	–	59	do.	do.	do.	S E	53	do.	Fresh.
26	–	56	do.	do.	do.	S E	52	do.	Strong.
27	–	51	do.	do.	do.	S E	48	do.	do.
28	–	57	do.	do.	Low water	E	52	do.	Light.
29	–	57	do.	do.	Ebb	N	48	do.	do.
31	–	61	do.	do.	do.	N	59	do.	Moderate.

BALLYHEIGE DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	–	59	On the	1 Foot	Ebb	SW	56	Noon	Moderate.
2	–	59	shore off	do.	do.	W	57	do.	do.
3	–	59	the rocks.	do.	do.	NW	56	do.	do.
4	–	59	do.	do.	do.	W	57	do.	do.
5	–	57	do.	do.	High water	W	55	do.	do.
7	–	59	do.	do.	Flood	W	55	do.	do.
8	–	65	do.	do.	do.	E	60	do.	do.
9	–	67	do.	do.	do.	N	64	do.	Light.
10	–	73	do.	do.	Low water	N	68	do.	do.
11	–	68	do.	do.	Ebb	N	65	do.	do.
12	–	65	do.	do.	do.	WNW	60	do.	do.
14	–	61	do.	do.	do.	W	59	do.	do.
15	–	59	do.	do.	do.	NW	57	do.	Fresh.
16	–	59	do.	do.	do.	NW	56	do.	do.
17	–	69	do.	do.	do.	NW	61	do.	Strong.
18	–	59	do.	do.	High water	W	59	do.	Moderate.
19	–	60	do.	do.	Flood.	N	57	do.	do.
21	–	65	do.	do.	do.	NW	61	do.	do.
22	–	64	do.	do.	do.	N	59	do.	do.
23	–	64	do.	do.	do.	N	60	do.	Light.
24	–	64	do.	do.	do.	N	61	do.	Moderate.
25	–	63	do.	do.	do.	N	60	do.	Light.
26	–	68	do.	do.	do.	N	66	do.	do.
28	–	73	do.	do.	Ebb	N	70	do.	do.
29	–	76	do.	do.	do.	N	73	do.	do.
30	–	70	do.	do.	do.	N E	70	do.	do.
July.									
1	–	68	On the	1 Foot	Ebb.	W	68	Noon	Light.
2	–	73	shore off	do.	do.	N	71	do.	do.
3	–	74	the rocks.	do.	do.	N	71	do.	do.
5	–	70	do.	do.	High water	SW	69	do.	Fresh.
6	–	66	do.	do.	Flood	SW	65	do.	do.
7	–	66	do.	do.	do.	WSW	64	do.	Strong.
8	–	65	do.	do.	do.	SW	63	do.	Fresh gale.
9	–	65	do.	do.	do.	NW	62	do.	Strong gale.
10	–	67	do.	do.	do.	W	65	do.	Moderate.
12	–	70	do.	do.	do.	W	64	do.	do.
13	–	66	do.	do.	Low water	WNW	65	do.	Light.
14	–	67	do.	do.	Ebb	WNW	65	do.	Moderate.
15	–	68	do.	do.	do.	W	64	do.	Light.
16	–	70	do.	do.	do.	SW	66	do.	do.
17	–	69	do.	do.	do.	S	69	do.	do.
19	–	74	do.	do.	do.	N	68	do.	do.
20	–	76	do.	do.	do.	W	74	do.	do.
21	–	69	do.	do.	High water	W	75	do.	Moderate.
22	–	69	do.	do.	Flood	SW	70	do.	Fresh.
23	–	71	do.	do.	do.	W	69	do.	Strong.
24	–	71	do.	do.	do.	SW	70	do.	do.
26	–	68	do.	do.	do.	SW	65	do.	do.
27	–	69	do.	do.	do.	W	67	do.	do.
28	–	70	do.	do.	do.	W	67	do.	do.
29	–	67	do.	do.	Low water	SW	65	do.	do.
30	–	64	do.	do.	Ebb	W	65	do.	do.
31	–	68	do.	do.	do.	W	64	do.	Fresh.

Pullendiva Division.—Pullendiva Station, Co. Sligo.

Taken by James W. Darmody, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°					°		
10	—	53	—	5 feet	Flood	N	51	Noon	
11	—	54	—	do.	do.	W	51	do.	
12	—	53	—	do.	do.	WNW	51	do.	
13	—	54	—	do.	do.	N N E	52	do.	
14	—	53	—	do.	do.	E	52	do.	
15	—	50	—	4 feet	do.	E	51	do.	
17	—	52	—	do.	High water	E N E	51	do.	
18	—	52	—	do.	Flood	N E	51	do.	
19	—	52	—	do.	do.	N E	51	do.	
20	—	55	—	do.	do.	NNW	52	do.	
21	—	55	—	do.	do.	NNW	53	do.	
22	—	56	—	do.	do.	N	55	do.	
24	—	53	—	do.	Low water	E	54	do.	
25	—	53	—	do.	Ebb	E	55	do.	
26	—	52	—	do.	do.	E	52	do.	
27	—	49	—	do.	do.	N N E	51	do.	Cold easterly wind.
28	—	51	—	do.	do.	N	51	do.	
29	—	52	—	do.	do.	E	53	do.	
31	—	54	—	do.	do.	NW	55	do.	
June.									
1	—	54	—	5 feet	Ebb	SW	56	Noon	
2	—	54	—	do.	do.	SW	59	do.	
3	—	54	—	do.	High water	SW	60	do.	
4	—	55	—	do.	Flood	SW	61	do.	
5	—	56	—	do.	do.	SW	62	do.	
7	—	54	—	do.	do.	NW	62	do.	
8	—	56	—	do.	do.	N	61	do.	
9	—	53	—	do.	do.	N	61	do.	
10	—	56	—	do.	do.	N	61	do.	
11	—	54	—	do.	do.	N E	62	do.	
12	—	56	—	do.	Low water	SW	62	do.	
14	—	56	—	do.	Ebb	W	62	do.	
15	—	56	—	do.	do.	N	60	do.	
16	—	56	—	do.	do.	N	60	do.	
17	—	56	—	do.	do.	WNW	61	do.	
18	—	56	—	do.	do.	NW	61	do.	
19	—	58	—	do.	do.	NW	61	do.	
21	—	58	—	do.	do.	SW	62	do.	
22	—	58	—	do.	do.	NW	62	do.	
23	—	58	—	do.	High water	W	63	do.	
24	—	59	—	do.	Flood	W	64	do.	
25	—	61	—	do.	do.	N E	64	do.	
26	—	61	—	do.	do.	N	63	do.	
28	—	62	—	do.	do.	N E	63	do.	
29	—	64	—	do.	do.	N E	63	do.	
30	—	64	—	do.	do.	N E	63	do.	

PULLENDIVA DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	–	65	—	5 feet	Ebb	N E	67	Noon	
2	–	66	—	do.	do.	N E	68	do.	
3	–	66	—	do.	High water	N N E	69	do.	
5	–	66	—	do.	Flood	N N E	69	do.	
6	–	66	—	do.	do.	W	68	do.	
7	–	66	—	do.	do.	S S W	70	do.	
8	–	64	—	do.	do.	S W	69	do.	
9	–	62	—	do.	do.	S W	68	do.	
10	–	–	—	do.	—	–	–	do.	Glass broken by accident.
12	–	–	—	do.	—	–	–	do.	
13	–	–	—	do.	—	–	–	do.	
14	–	–	—	do.	—	–	–	do.	
15	–	–	—	do.	—	–	–	do.	
16	–	–	—	do.	—	–	–	do.	
17	–	62	—	do.	High water	S W	67	do.	
19	–	62	—	do.	Flood	N N W	68	do.	
20	–	64	—	do.	do.	S	70	do.	
21	–	64	—	do.	do.	S	72	do.	
22	–	62	—	do.	do.	S W	74	do.	
23	–	62	—	do.	do.	W	73	do.	
24	–	61	—	do.	do.	S W	74	do.	
26	–	61	—	do.	Low water	S S W	75	do.	
27	–	62	—	do.	Ebb	S W	73	do.	
28	–	62	—	do.	do.	S W	71	do.	
29	–	62	—	do.	do.	S	74	do.	
30	–	62	—	do.	do.	S S W	74	do.	
31	–	62	—	do.	do.	W	76	do.	

KENMARE DIVISION.—LACKEEN POINT, CO. KERRY.

Taken by THOMAS BROWN, Chief Boatman.

May.									
10	55	–	1¾ miles	12 fathoms	Flowing	N	57	Noon	The nearest oyster banks are at Dunkerrin, four miles off, but there are oysters scattered about where these temperatures have been taken.
11	55	–	2 miles	do.	Flood	N N W	56	do.	
12	54	–	1½ miles	do.	do.	N N E	58	do.	
13	55	–	1 mile	do.	do.	S E	58	do.	
14	52	–	1½ miles	do.	do.	E N E	56	do.	
15	52	–	1¼ miles	do.	do.	N N E	51	do.	
17	55	–	1½ miles	do.	do.	S W	54	do.	
18	55	–	1¼ miles	do.	Ebb	N W	58	1 p.m.	
19	53	–	1½ miles	do.	do.	N N W	53	Noon	
20	53	–	do.	do.	do.	N W	57	do.	
21	55	–	do.	do.	do.	N W	57	do.	
22	55	–	do.	do.	Flood	W S W	57	do.	
24	55	–	do.	do.	do.	S W	59	do.	
25	55	–	do.	do.	do.	E S E	58	do.	
26	52	–	1 mile	do.	do.	E N E	54	do.	
27	53	–	do.	do.	do.	N	53	do.	
28	51	–	do.	do.	Low water	E N E	52	do.	
29	53	–	1½ miles	do.	Flood	N N W	58	1 30 p.m.	
31	54	–	do.	do.	Ebb	W N W	61	Noon	

KENMARE DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	54	–	1 mile	12 fathoms	Ebb	WSW	60	Noon	
2	54	–	1½ miles	do.	do.	WSW	60	do.	
3	53	–	1 mile	do.	High water	W	59	do.	
4	55	–	1½ miles	do.	Flood	SW	60	do.	
5	54	–	1 mile	do.	do.	SW	58	do.	
7	–	–	–	–	–	–	–	—	Crew on duty at District Ship, per order of District Captain.
8									
9	60	–	1½ miles	12 fathoms	Flood	SW	69	Noon	
10	59	–	do.	do.	do.	SE	68	do.	
11	56	–	do.	do.	do.	E	58	do.	
12	58	–	1 mile	do.	do.	W	55	do.	
14	58	–	1½ miles	do.	Ebb	W	55	do.	
15	57	–	1 mile	do.	do.	NW	56	do.	
16	51	–	do.	do.	do.	NW	58	do.	
17	57	–	do.	do.	do.	NW	58	do.	
18	57	–	1½ miles	do.	do.	W	58	do.	
19	58	–	1 mile	do.	Flood	WNW	60	do.	
21	57	–	1½ miles	do.	do.	NNW	60	do.	
22	58	–	do.	do.	do.	S	62	do.	
23	58	–	do.	do.	do.	E	62	do.	
24	58	–	do.	do.	do.	–	65	do.	
25	58	–	do.	do.	do	–	67	do.	
26	58	–	do.	do.	Low water	–	66	do.	
28	60	–	1 mile	do.	Ebb	–	68	do.	
29	62	–	1½ miles	do.	do.	–	70	do.	
30	62	–	do.	do.	do.	–	70	do.	
July.									
1	64	–	1½ miles	12 fathoms	Ebb	W	70	Noon	
2	–	–	–	–	–	–	–	—	On board H.M. Gunboat *Cromer*, for duty.
3									
5	62	–	1 mile	12 fathoms	Flood	SW	64	Noon	
6	–	–	–	–	–	–	–	—	On duty, for Inspection by District Captain.
7	64	–	1½ miles	12 fathoms	Flood	SW	68	Noon	
8	–	–	–	–	–	–	–	—	Impracticable.
9	64	–	1 mile	12 fathoms	Flood	WNW	68	1 30 p.m.	
10	64	–	1½ miles	do.	do.	SW	67	do.	
12	65	–	do.	do.	Low water	NNW	66	do.	
13	65	–	do.	do.	Ebb	NE	67	do.	
14	65	–	1 mile	do.	do.	SW	68	do.	
15	68	–	1½ miles	do.	do.	SW	70	do.	
16	68	–	1 mile	do.	do.	SE	70	do.	
17	68	–	4 miles	do.	do.	W	70	do.	
19	68	–	1½ miles	do.	Flood	WNW	72	do.	
20	68	–	do.	do.	do.	WSW	74	do.	
21	64	–	do.	do.	do.	SW	68	do.	
22	65	–	1 mile	do.	do.	WSW	67	do.	
23	66	–	1½ miles	do.	do.	WSW	67	do.	
24	64	–	1 mile	do.	Low water	WSW	66	do.	
26	66	–	1½ miles	do.	Ebb	WSW	68	do.	
27	66	–	1 mile	do.	do.	SW	68	do.	
28	67	–	do.	do.	do.	WSW	69	do.	
29	–	–	–	–	–	–	–	—	Impracticable.
30	65	–	1 mile	12 fathoms	Ebb	WNW	68	1 30 p.m.	
31	66	–	do.	do.	do.	SW	68	do.	

Leith Division, Edinburgh.—North Berwick Station, Berwick.

Taken by the Commanding Officer of the Coast-guard.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°	Miles.	Fathoms.			°		
10	45	46	1/8	4	Flood	N E	47	Noon	Cold, rain.
11	46	47	1/4	6	do.	W	52	do.	Fine.
12	47	48	1/4	6	do.	W	52	do.	Cloudy.
13	47	49	1/8	8	do.	WSW	55	do.	Fine.
14	47	48	1/2	9	do.	E	53	do.	do.
15	47	48	1/8	4	do.	E by S	49	do.	Cloudy; strong breeze.
17	47	48	1/2	9	do.	E S E	50	1 30 p.m.	do.
18	46	47	1/2	8 1/2	Ebb	E	48	do.	do.
19	46	47	1/2	8	do.	N N E	52	do.	do.
20	45	46	1/6	4 1/4	do.	W by N	47	do.	do.
21	46	48	1/2	8	do.	E	53	do.	do.
22	48	50	1/2	10	do.	E	55	do.	do.
24	48	50	1/2	10	Flood	E	54	do.	Fine; moderate air.
25	47	48	1/2	9 3/4	do.	E S E	49	do.	Cloudy.
26	48	49	1/4	6	do.	E S E	50	do.	do.
27	–	48	—	—	do.	N E by E	48	do.	Stormy.
28	48	48	—	—	do.	E N E	48	do.	do.
29	48	50	1/2	7 1/2	do.	E	57	do.	Hazy.
31	49	50	1/4	5	Low water	Calm	56	do.	Fine.
June.									
1	49	50	1/2	9	Flood	E S E	56	2 p.m.	Fine; gentle breeze.
2	50	51	1/2	8	Ebb	Calm	58	Noon	Cloudy.
3	51	52	1/4	5	do.	W	57	do.	do. strong breeze.
4	57	52	1/2	9	do.	W	56	do.	Squally.
5	52	53	1/2	9	do.	E	57	do.	Heavy rain; light airs.
7	52	54	1/2	7	Flood	W	63	do.	Hazy; moderate breeze.
8	51	54	1/2	9	do.	W by N	61	do.	Light breeze.
9	52	53	1/2	8	do.	W	61	do.	Cloudy; fresh breeze
10	52	53	1/2	8	do.	E	57	do.	Cloudy; light breeze
11	52	52	1/2	8 1/2	do.	W	59	do.	do.
12	52	52	1/2	8	do.	W	57	do.	Cloudy; fresh breeze
14	51	52	1/2	7 1/2	do.	E	54	do.	Light breeze; clear.
15	–	47	—	—	Low water	N E	48	do.	Rain; strong gale.
16	–	50	—	—	Ebb	N	49	do.	Light breeze; ground swell.
17	51	50	1/4	5	do.	W	53	do.	Light breeze; cloudy
18	51	52	1/2	9 1/2	do.	E S E	56	do.	do.
19	51	53	1/2	9 1/2	do.	E	57	do.	do.
21	51	53	1/2	10	High water	E	56	do.	do.
22	51	53	1	14	Flood	E	57	do.	Moderate breeze; clear.
23	52	54	1/2	8 1/2	do.	N W	65	do.	do.
24	52	54	1/2	8 1/2	do.	E	66	do.	Moderate breeze; cloudy.
25	53	54	1/2	8 1/2	do.	E	65	do.	Light breeze; fine.
26	53	55	1/2	8 1/2	do.	W	67	do.	Light breeze; hazy.
28	53	55	1/2	8 1/4	do.	E	63	do.	Light breeze; clear.
29	53	55	1/2	8 1/4	do.	E	63	do.	Light breeze; fine.
30	52	54	1/2	8	Ebb	E	62	do.	do.

LEITH DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°	Miles.	Fathoms.			°		
1	53	55	½	9	Ebb	E	64	Noon	Light breeze; fine.
2	54	55	½	8¾	do.	E	65	do.	Light breeze; hazy.
3	54	56	½	8½	do.	N	62	do.	do.
5	55	56	½	9	do.	S S W	66	do.	Fresh breeze; cloudy
6	–	57	—	—	High water	W	65	do.	Strong breeze.
7	56	57	½	9	Flood	W	66	do.	Light breeze; fine.
8	56	58	½	9½	do.	S W	67	do.	Strong do. cloudy.
9	–	57	—	—	do.	W	67	do.	Heavy gale.
10	57	58	½	8½	do.	W½N	68	do.	Strong breeze.
12	56	58	½	9½	do.	WNW	66	do.	do.
13	–	57	½	8½	do.	WNW	65	do.	do.
14	–	57	—	—	Low water	W	65	do.	do.
15	55	57	—	—	Ebb	W	69	do.	do.
16	55	57	½	8½	do.	W	69	do.	do.
17	56	58	½	8½	do.	E	67	do.	Moderate breeze.
19	55	56	½	9½	do.	E	68	do.	do.
20	54	55	½	9½	do.	E	66	do.	do.
21	55	56	½	10	Flood	E	68	do.	do.
22	58	57	1	12½	do.	W	64	do.	do.
23	57	58	½	10	do.	NNW	68	do.	Fresh breeze.
24	57	57	½	10	do.	S	68	do.	Gentle breeze.
26	56	57	½	8½	do.	S S W	67	do.	Moderate breeze.
27	57	58	½	8½	do.	N W	67	do.	Light breeze.
28	56	58	½	8	do.	S E	70	do.	do.
29	57	58	½	8	Low water	S S E	71	do.	Fresh breeze.
30	56	57	½	8½	Ebb	W	66	do.	Strong breeze.
31	56	57	½	9	do.	W	63	do.	Fresh breeze.

ABERDEEN DIVISION.—BRIDGE OF DON STATION, ABERDEENSHIRE.

Taken by JOHN BARNES, Staff Commander.

May.									
10	–	48	—	—	—	N E	48	—	Heavy sea on the bar.
11	–	48	—	—	—	E	48	—	
12	46	48	½ mile	3 fathoms	Flood	S E	48	Noon	
13	46	48	do.	do.	do.	S S W	48	11 30 a.m.	
14	46	48	do.	do.	do.	S E	48	Noon	
15	46	48	do.	do.	do.	S E	48	do.	
17	46	48	do.	do.	do.	–	48	do.	
18	46	48	do.	do.	do.	–	48	do.	
19						N E	48		Strong gales, with a heavy sea on; the bar not passable.
20						N	48		
21						N	48		
22						N	48		
24	–	–	—	—	—	E	48	—	
25						E S E	48		
26						E	48		
27						N E	48		
28	46	48	½ mile	3 fathoms	Flood	N E	48	Noon	
29	46	48	do.	do.	do.	N	50	do.	
31	46	48	do.	do.	do.	N	50	do.	

ABERDEEN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°					°		
1	50	52	½ mile	3 fathoms	Low water	S E	54	Noon	
2	50	52	do.	do.	do.	S W	54	11 30 a.m.	
3	50	52	do.	do.	Ebb	S W	54	Noon	
4	50	52	do.	do.	do.	–	54	do.	
5	50	52	do.	do.	do.	–	54	do.	
7	50	52	do.	do.	Flood	–	54	do.	
8	–	–	do.	do.	—	N W	52	—	Heavy gales; bar impassable.
9	–	–	do.	do.	—	N	52	– –	
10	–	–	do.	do.	—	N	52	—	
11	–	–	do.	do.	—	N	52	—	
12	52	52	do.	do.	Flood	S W	54	Noon	
14	51	52	do.	do.	do.	E	54	do.	
15	52	53	do.	do.	do.	E	54	do.	
16	–	–	do.	do.	—	N	54	—	Heavy sea on the bar.
17	–	–	do.	do.	—	S W	54	—	
18	–	–	do.	do.	—	E	54	—	
19	52	52	do.	do.	Ebb	E	54	Noon	
21	52	52	do.	do.	do.	N E	54	do.	
22	52	52	do.	do.	do.	N E	54	do.	
23	52	52	do.	do.	High water	N N E	54	do.	
24	52	54	do.	do.	do.	N E	54	11 30 a.m.	
25	52	54	do.	do.	do.	S	56	11 45 a.m.	
26	54	56	do.	do.	Flood	–	58	Noon	
28	54	56	do.	do.	do.	–	58	do.	
29	54	56	do.	do.	do.	–	58	11 15 a.m.	
30	54	56	do.	do.	do.	–	58	11 a.m.	
July.									
1	54	56	½ mile	3 fathoms	Low water	–	58	Noon	
2	54	56	do.	do.	do.	–	58	11 45 a.m.	
3	54	56	do.	do.	Ebb	–	58	Noon	
5	54	56	do.	do.	do.	S	58	do.	
6	54	56	do.	do.	do.	N W	58	do.	
7	54	56	do.	do.	do.	S W	58	do.	
8	54	56	do.	do.	High water	S W	58	do.	
9	54	56	do.	do.	do.	S W	58	do.	
10	54	56	do.	do.	Ebb	S W	58	do.	
12	54	56	do.	do.	do.	S W	60	do.	
13	54	56	do.	do.	Flood	W S W	60	do.	
14	54	56	do.	do.	do.	S W	60	do.	
15	56	56	do.	do.	do.	S	60	do.	
16	56	56	do.	do.	Low water	–	60	do.	
17	56	58	do.	do.	Ebb	–	60	do.	
19	56	58	do.	do.	do.	–	60	do.	
20	56	58	do.	do.	Flood	S	60	do.	
21	56	56	do.	do.	do.	S	60	do.	
22	56	56	do.	do.	High water	S E	58	do.	
23	56	56	do.	do.	do.	S W	60	do.	
24	56	56	do.	do.	Flood	S W	60	do.	
26	56	56	do.	do.	do.	S	60	do.	
27	56	56	do.	do.	do.	S	58	do.	
28	56	56	do.	do.	do.	S W	58	do.	
29	56	56	do.	do.	do.	S	58	do.	
30	56	56	do.	do.	do.	S	58	do.	
31	56	56	do.	do.	do.	S W	58	do.	

ABERDEEN DIVISION.—LERWICK STATION, MAINLAND, SHETLAND ISLES.

Taken by THOMAS JOHNSTON, Chief Officer.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°	Miles.	Fathoms.			°		
10	46	48	1	10	Ebb	S S E	50	11 45 a.m.	
11	47	50	⅔	9	do.	N W	55	Noon	
12	47	48	1⅓	11	do.	N E	50	do.	
13	47	48	3	12	High water	N W	49	11 45 a.m.	
14	47	48	1	8	do.	N N W	50	Noon	
15	48	49	2½	10	Flood	E N E	50	do.	
17	48	48	2	10	do.	N E	49	11 45 a.m.	
18	48	50	1½	9	do.	Calm	52	12 30 p.m.	
19	–	47	—	—	do.	N N E	46	12 15 p.m.	Strong gale.
20	47	49	2	10	Low water	N E	52	12 10 p.m.	
21	48	49	2½	11	Ebb	N N W	50	Noon	
22	49	50	1½	8	do.	N N E	52	12 30 p.m.	
24	48	50	3	12	do.	N	50	11 30 a.m.	
25	47	48	2	10	do.	S E	49	11 45 a.m.	
26	48	48	1	8	do.	N N W	47	Noon	
27	47	48	2	9	High water	N N W	47	11 45 a.m.	
28	47	48	1½	8	do.	E N E	48	12 10 p.m.	
29	48	50	2	9	Flood	W	54	11 45 a.m.	
31	48	49	2½	10	do.	N	50	11 45 a.m.	
June.									
1	48	48	2	10	Flood	N N W	49	12 15 p.m.	
2	48	50	2	8	do.	S W	55	do.	
3	49	50	1½	6	Low water	W	53	11 30 a.m.	
4	50	49	2	8	do.	Calm	54	12 15 p.m.	
5	49	50	3	10	Ebb	Calm	57	Noon	
7	50	53	1	8	do.	Calm	57	11 30 a.m.	
8	49	51	2	12	do.	W	54	12 30 p.m.	
9	–	49	–	—	do.	N W	46	Noon	Strong N W gale.
10	–	48	–	—	do.	N	48	do.	do.
11	49	50	1½	10	High water	W N W	52	11 30 a.m.	
12	49	50	1	8	do.	W S W	53	Noon	
14	49	50	1½	9	Flood	E	52	do.	
15	50	50	1	9	do.	N W	52	11 40 a.m.	
16	50	52	2	8	do.	N N W	58	Noon	
17	50	51	2	8	do.	N N W	53	11 30 a.m.	
18	51	53	2	9	Low water	N N W	56	do.	
19	52	54	2	9	do.	E	58	12 30 p.m.	
21	50	50	1	8	Ebb	N N E	55	Noon	
22	50	53	3	10	do.	N N W	56	12 10 p.m.	
23	50	54	1	8	do.	W	58	12 30 p.m.	
24	52	55	2	8	do.	Calm	72	11 45 a.m.	
25	53	54	2	9	do.	W S W	66	12 15 p.m.	
26	52	54	2	9	High water	W S W	62	Noon	
28	51	52	2	8	Flood	W	64	do.	
29	51	52	2	8	do.	W	62	do.	
30	52	56	2½	10	do.	W	66	12 10 p.m.	

ABERDEEN DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°	Miles.	Fathoms.			°		
1	52	52	2	10	Flood	WNW	60	12 30 p.m.	
2	51	53	2	8	do.	E N E	56	Noon	
3	52	54	1½	8	Low water	E N E	57	11 40 a.m.	
5	52	54	1½	8	Ebb	S	57	Noon	
6	52	53	2	8	do.	W	57	11 45 a.m.	
7	51	52	2	10	do.	W	54	12 10 p.m.	
8	51	54	2	10	do.	S	60	12 30 p.m.	
9	51	54	1½	8	do.	S S W	58	11 45 a.m.	
10	52	54	2	8	do.	W S W	60	12 15 p.m.	
12	51	53	2	9	High water	W S W	58	Noon	
13	51	53	1	8	Flood	W N W	56	11 40 a.m.	
14	51	53	2	8	do.	N E	58	11 45 a.m.	
15	51	53	2	9	do.	W N W	58	Noon	
16	51	52	1½	9	do.	W N W	56	12 30 p.m.	
17	53	55	1½	9	do.	W	72	Noon	
19	52	54	2	10	Low water	N W	65	12 30 p.m.	
20	52	53	1⅓	9	Ebb	S W	58	do.	
21	52	54	2	9	do.	S	58	12 15 p.m.	
22	52	54	2	9	do.	W S W	63	11 30 a.m.	
23	53	54	2	9	do.	S S W	61	12 20 p.m.	
24	53	56	2	9	do.	S W	63	Noon	
26	53	55	1½	8	High water	S	60	12 15 p.m.	
27	52	54	1	8	Flood	N N W	57	11 40 a.m.	
28	53	54	2	10	do.	S W	62	12 30 p.m.	
29	53	55	2	10	do.	S	60	11 45 a.m.	
30	53	55	1½	9	do.	W	64	Noon	
31	54	55	1½	9	do.	Calm	62	11 40 a.m.	

CROMARTY DIVISION.—CROMARTY STATION, ROSS-SHIRE.

Taken by THOMAS LAPÉNOTIÈRE, Divisional Officer.

May.									
10	47	47	½	23	Ebb	Calm	53	Noon	Greenwich time observed with A, and 10″ to 15″ difference in time for B, *later*.
11	47	47	½	28	do.	W N W	50	do.	
12	48	48	⅓	21	Flood	W	58	do.	
13	47	48	½	20	do.	W	57	do.	Cloudy.
14	47	49	½	22	do.	E	54	do.	Clear.
15	47	48	⅓	23	do.	E	50	do.	do.
17	49	49	½	27	do.	E	52	do.	do.
18	49	50	⅓	22	do.	E	51	do.	Cloudy.
19	49	50	½	18	Ebb	N	52	do.	Showery.
20	49	49	½	25	do.	N	51	do.	do.
21	48	48	½	24	do.	N	50	do.	Cloudy.
22	48	48	½	25	do.	Calm	50	do.	do.
24	49	50	½	23	do.	E	49	do.	Clear.
25	49	50	⅓	22	do.	E	50	do.	Cloudy.
26	49	50	½	22	Flood	E	48	do.	do.
27	49	49	⅓	12	do.	N E	47	do.	Showery, hail.
28	49	50	½	24	do.	E	49	do.	Clear.
29	49	50	½	21	do.	W	52	do.	Cloudy.
31	49	50	½	24	do.	N W	50	do.	do.

CROMARTY DIVISION, &c. *continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
June.	°	°	Miles.	Fathoms.			°		
1	49	51	½	21	Flood	E	49	Noon	Cloudy.
2	52	52	¼	20	do.	Calm	60	do.	Clear.
3	50	52	½	24	Ebb	W	54	do.	Cloudy, rain.
4	50	52	½	25	do.	NNW	53	do.	do.
5	51	52	¼	19	do.	E	57	do.	do.
7	51	52	½	20	do.	Calm	59	do.	do.
8	52	52	½	20	do.	NW	50	do.	do.
9	51	52	½	17	do.	NNW	54	do.	do.
10	50	51	½	20	Flood	NNW	53	do.	do.
11	49	51	½	24	do.	NNW	48	do.	do.
12	49	51	½	22	do.	W	52	do.	Fine weather.
14	50	51	½	22	do.	E	50	do.	Rain.
15	50	50	½	16	do.	NE	46	do.	Clear.
16	51	52	¼	16	do.	NNE	50	do.	Light rain.
17	51	54	¾	6	do.	Calm	56	do.	Cloudy.
18	53	53	½	15	Ebb	E	59	do.	do.
19	52	52	½	20	do.	E	57	do.	do.
21	52	52	½	27	do.	ESE	57	11 30 a.m.	do.
22	52	52	¾	17	do.	NW	58	do.	do.
23	51	54	1	18	do.	Calm	57	do.	do.
24	53	57	2	11	Flood	Calm	58	do.	do.
25	52	57	2	11	Ebb	W	64	2 p.m.	Clear.
26	53	58	2	4	Flood	NW	64	do.	Cloudy.
28	54	59	½	25	do.	E	60	do.	Fine.
29	56	57	⅓	19	do.	E	62	do.	Clear.
30	56	58	⅓	4	do.	E	60	do.	do.
July.									
1	58	61	½	24	Flood	E	70	Noon	Clear.
2	58	60	½	21	do.	E	60	do.	Hazy.
3	57	58	½	21	Ebb	E	60	do.	Cloudy.
5	58	59	½	22	do.	WSW	62	do.	Rain.
6	56	58	½	5	do.	W by S	59	do.	Strong gales; clear.
7	54	55	¾	24	do.	E	57	do.	Hazy.
8	54	55	½	22	do.	W	61	do.	Cloudy.
9	56	57	⅓	10	do.	SW	58	do.	Cloudy; heavy gale.
10	52	54	⅓	19	Flood	NNW	58	do.	Cloudy.
12	54	57	½	6	do.	W	59	do.	Strong gales; fine.
13	53	55	½	12	do.	NW	58	do.	do.
14	53	55	¾	22	do.	W	59	do.	Hazy.
15	55	58	¼	24	do.	W	62	do.	Cloudy.
16	55	60	½	5	do.	W	60	do.	Clear.
17	55	57	½	10	Ebb	E	63	do.	Cloudy.
19	56	57	½	9	do.	ESE	58	do.	do.
20	56	58	½	23	do.	E	58	do.	do.
21	58	59	¼	7	do.	SE	68	do.	Clear.
22	54	56	½	22	do.	WSW	62	do.	Cloudy.
23	58	59	½	9	do.	SW	69	do.	Squally.
24	56	57	¼	17	Flood	SW	64	do.	do.
26	56	57	¼	16	do.	SE	62	do.	Hazy.
27	56	57	¾	24	do.	ESE	60	do.	Cloudy.
28	56	58	½	23	do.	W	66	do.	do.
29	58	59	½	13	do.	SW	62	do.	do.
30	56	58	½	4½	do.	NNW	59	do.	Clear.
31	57	58	½	17	do.	W	62	do.	Thick, with rain.

Greenock Division.—Ardrossan Station, Ayrshire.

Taken by W. M'Millan, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°		Feet.			°		
10	–	45	In the harbour	6	Ebb	E	48	Noon	No oyster beds.
11	–	45	do.	6	do.	N W	55	do.	
12	–	46	do.	8	High water	N W	55	do.	
13	–	47	do.	8	Flood	S W	60	do.	
14	–	47	do.	6	do.	S	59	do.	
15	–	47	do.	6	do.	E	57	do.	
17	–	48	do.	4½	do.	E	57	do.	
18	–	48	do.	3	do.	E	57	do.	
19	–	48	do.	2½	do.	N	57	do.	
20	–	46	do.	2	Low water	N	55	do.	
21	–	47	do.	3	Ebb	N	55	do.	
22	–	50	do.	4½	do.	Var.	59	do.	
24	–	49	do.	5	do.	S E	59	do.	
25	–	49	do.	6½	do.	E	57	do.	
26	–	49	do.	6½	High water	E	57	do.	
27	–	47	do.	6½	Flood	E	55	do.	
28	–	49	do.	6	do.	E	59	do.	
29	–	49	do.	5	do.	N	55	do.	
31	–	52	do.	4	do.	N W	55	do.	
July.									
1	–	60	In the harbour	1 foot	Flood	Calm	72	Noon	
2	–	60	do.	do.	do.	Calm	72	do.	
3	–	64	do.	do.	Low water	S W	75	do.	
5	–	60	do.	do.	Ebb	S W	66	do.	
6	–	63	do.	do.	do.	N W	65	do.	
7	–	64	do.	do.	do.	S W	67	do.	
8	–	63	do.	do.	do.	S W	67	do.	
9	–	61	do.	do.	do.	W	62	do.	
10	–	63	do.	do.	High water	W	64	do.	
12	–	59	do.	do.	Flood	N W	60	do.	
13	–	60	do.	do.	do.	N W	65	do.	
14	–	59	do.	do.	do.	N W	60	do.	
15	–	60	do.	do.	do.	Ebb	64	do.	
16	–	54	do.	do.	Low water	N W	69	do.	
17	–	65	do.	do.	do.	Var.	75	do.	
19	–	66	do.	do.	Ebb	N W	76	do.	
20	–	61	do.	do.	do.	Calm	77	do.	
21	–	60	do.	do.	do.	Var.	69	do.	
22	–	61	do.	do.	do.	Calm	69	do.	
23	–	62	do.	do.	High water	S	70	do.	
24	–	62	do.	do.	do.	S S W	68	do.	
26	–	62	do.	do.	Flood	S W	66	do.	
27	–	63	do.	do.	do.	S W	67	do.	
28	–	64	do.	do.	do.	W	74	do.	
29	–	60	do.	do.	do.	N	64	do.	
30	–	60	do.	do.	do.	S W	61	do.	
31	–	59	do.	do.	do.	N W	69	do.	

Stranraer Division.—Port Patrick Station, Wigtonshire.

Taken by David M'Intosh, Chief Boatman.

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
May.	°	°	Yards.				°		
10	–	49	200	12 feet	Ebb	N E	56	Noon	No oyster beds at or near Port Patrick.
11	–	50	100	10 feet	do.	NW	58	do.	
12	–	50	150	12 feet	do.	NW	56	do.	
13	50	51	300	6 fathoms	do.	NW	60	12 30 p.m.	
14	–	50	100	10 feet	Flood	S E	58	11 30 a.m.	
15	–	50	100	12 feet	do.	E S E	59	Noon	
17	–	50	100	14 feet	do.	S E	58	do.	
18	–	51	50	8 feet	do.	S E	60	do.	
19	–	51	50	10 feet	do.	E	59	do.	
20	–	50	100	12 feet	do.	N N E	58	do.	
21	–	50	200	11 feet	Ebb	WNW	61	do.	
22	–	52	40	6 feet	do.	NW	63	do.	
24	–	52	40	5 feet	do.	S E	62	do.	
25	–	51	100	10 feet	do.	S E	60	do.	
26	–	51	100	8 feet	do.	E S E	58	do.	
27	–	51	200	12 feet	do.	E	58	do.	
28	–	51	200	12 feet	Flood	E	58	do.	
29	–	52	50	8 feet	do.	NW	60	do.	
31	–	50	200	10 feet	do.	NW	57	do.	
June.									
1	52	–	300 yards	6 fathoms	Flood	SW	62	Noon	
2	–	53	200 yards	12 feet	do.	S	65	do.	
3	–	53	do.	13 feet	do.	WSW	64	do.	
4	–	53	100 yards	10 feet	Ebb	WNW	64	do	
5	–	53	200 yards	12 feet	do.	S SW	59	do.	Thick rain.
7	–	53	do.	10 feet	do.	S	64	do.	Thunder.
8	–	53	do.	8 feet	do.	N NW	60	do.	
9	–	54	100 yards	6 feet	do.	N NW	64	do.	
10	–	54	do.	5 feet	do.	NW	62	do.	
11	–	53	do.	6½ feet	Flood	NW	63	do.	
12	–	55	50 yards.	7 feet	do.	SW	62	do.	
14	–	54	100 yards	8 feet	do.	N NW	60	do.	
15	–	54	do.	9 feet	do.	N NW	58	do.	Hail; showers.
16	–	54	do.	12 feet	do.	N NW	57	do.	
17	–	55	50 yards	8 feet	do.	SW	65	1 30 p.m.	
18	–	54	200 yards	10 feet	do.	NW	62	12 30 p.m.	
19	–	54	do.	12 feet	Ebb	S E	64	Noon	
21	–	55	do.	10 feet	do.	NW	62	do.	
22	–	55	100 yards	8 feet	do.	NW	62	do.	
23	–	54	do.	6½ feet	do.	N NW	61	do.	Hazy; thunder.
24	–	55	200 yards	8 feet	do.	WNW	65	do.	
25	–	56	½ mile	10 fathoms	do.	Calm	72	12 30 p.m.	
26	–	57	50 yards	10 feet	Flood	NW	73	Noon	
28	–	58	do.	8½ feet	do.	NW	65	1 p.m.	
29	–	58	½ mile	11 fathoms	do.	NW	65	Noon	Hazy.
30	–	58	200 yards	12 feet	do.	Calm	68	do.	Calm and fine.

STRANRAER DIVISION, &c.—*continued.*

1869.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Temperature of Air.	Hour at which Temperature taken.	Observations.
July.	°	°					°		
1	–	56	200 yards	8 feet	Flood	N N W	64	Noon	No oyster beds at or near Port Patrick.
2	–	56	do.	7 feet	do.	N N W	64	do.	
3	–	56	do.	5½ feet	do.	Calm	68	do.	
5	–	56	50 yards	4 feet	Ebb	S S W	64	do.	
6	–	57	200 yards	10 feet	do.	N W	65	do.	Thick, with rain.
7	–	56	50 yards	8 feet	do.	S S W	65	do.	Thick fog.
8	–	56	do.	9 feet	do.	S S E	64	do.	
9	–	56	do.	10½ feet	do.	W S W	64	do.	
10	–	58	200 yards	12 feet	do.	W S W	68	do.	
12	–	57	do.	11 feet	Flood	W N W	64	do.	
13	–	57	do.	13 feet	do.	N W	62	do.	
14	–	58	do.	10½ feet	do.	W N W	62	do.	
15	–	58	50 yards	8 feet	do.	Calm	64	do.	Hazy.
16	–	58	do.	10 feet	do.	N N W	60	1 30 p.m.	
17	–	59	½ mile	14 fathoms	do.	Calm	70	Noon	
19	–	58	200 yards	12 feet	Ebb	N W	66	do.	
20	–	59	do.	10½ feet	do.	Calm	70	do	
21	–	58	50 yards	8 feet	do.	S S W	69	do.	
22	–	58	do.	7 feet	do.	S S E	65	do.	Thick fog.
23	–	59	do.	6½ feet	do.	S S W	67	do.	Thunder.
24	–	58	200 yards	12 feet	do.	S S W	67	do.	
26	–	58	½ mile	12 fathoms	Flood	N W	64	do.	Thunder.
27	–	59	200 yards	10 feet	do.	W S W	65	do.	do.
28	–	59	do.	8½ feet	do.	S W	67	do.	
29	–	58	do.	7 feet	do.	S S W	64	do.	Fresh gale and rain.
30	–	58	do.	6½ feet	do.	S W	63	do.	
31	–	60	¼ mile	11 fathoms	do.	S W	64	12 30 p.m.	Sultry; thunder.

ABSTRACT

OF THE

TABLES OF TEMPERATURE

FOR

MAY, JUNE, JULY, 1869.

Abstract of the Tables of Temperature

MAY.

Locality.	Situation.	Latitude.	10.		11.		12.		13.		14.	
			A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Arcachon, .	W. C. F.	—	–	62	–	62	–	62	–	62	–	63
Cougre, . .	do.	—	–	–	–	–	–	–	–	–	–	–
Auray, . .	do.	—	–	–	–	–	–	–	60	60	61	61
Granville, .	do.	—	–	–	–	–	–	–	–	–	–	–
Jersey, . .	Channel	—	–	–	–	–	–	–	–	–	–	–
St. Catherine's,	S. C. E.	50/50	52	53	52	53	52	54	52	54	52	53
Eastbourne, .	do.	—	52	53	51	52	51	51	52	52	51	51
Ramsgate, .	S. E. C. E.	50/75	54	56	52	56	52	54	54	55	–	54
Cromer, . .	E. C. E.	52/70	–	53	–	51	–	53	–	52	–	52
Whitehaven, .	W. C. E.	54/50	48	49	49	49	49	50	50	50½	50	50½
Douglas, . .	E. C. Man	54/20	–	46	–	47	–	48	–	48	–	48
Bangor, . .	W. C. W.	53/20	–	50	–	50	–	51	–	52	–	52
Milford, . .	do.	51/30	–	50	–	53	–	51	–	54	–	52
Queenstown, .	S. C. I.	51/50	53	53	53	53	53	53	52	55	52	55
Waterford, .	do.	52/10	–	52	–	54	–	54	–	–	–	–
Arklow, . .	E. C. I.	—	–	–	–	–	–	–	–	–	–	–
Dublin, . .	do.	53/20	–	49	–	49	–	48	48	–	–	50
Carlingford, .	do.	54/	–	–	–	–	–	55	–	55	–	55
Carrickfergus, .	do.	54/50	–	49	–	49	–	48	–	49	–	50
Rathmullen, .	N. C. I.	55/5	–	49	–	49	–	50	–	50	–	49
Carn, . .	do.	55/17	–	43	–	49	–	43	–	44	–	44
Rutland, . .	do.	54/58	–	48	–	48	–	49	–	51	–	52
Belmullet, .	W. C. I.	54/10	–	–	–	–	–	–	–	–	–	–
Westport, .	do.	53/45	–	52	–	53	–	52	–	53	–	52
Galway, . .	do.	53/10	–	52	–	51	–	52	–	52	–	53
Ballyheigh, .	do.	52/20	–	52	–	56	–	61	–	59	–	58
Pullendiva, .	do.	54/20	–	53	–	54	–	53	–	54	–	53
Kenmare, .	S. W. C. I.	51/50	55	–	55	–	54	–	55	–	52	–
North Berwick,	E. C. S.	—	45	46	46	47	47	48	47	49	47	48
Aberdeen, .	do.	—	–	–	–	–	46	48	46	48	46	48
Cromarty, .	N. E. C. S.	—	47	47	47	47	48	48	47	48	47	48
Greenock, .	W. C. S.	—	–	45	–	45	–	46	–	47	–	47
Portpatrick, .	do.	—	–	49	–	50	–	50	50	51	–	50

Explanations.

A. column—Temperature at sea.
B. column—Temperature near shore.
W.C.F.—West coast of France.
W.C.E.—West coast of England.
W.C.I.—West coast of Ireland.
W.C.S.—West coast of Scotland.

for month of MAY, 1869.

MAY.

15.		16.		17.		18.		19.		20.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	63	–	63	–	63	–	63	–	63	–	62	Arcachon.
–	–	–	–	–	–	–	–	–	–	–	–	Cougre.
61	61	61	61	62	62	61	61	61	61	61	61	Auray.
–	–	–	–	–	–	–	–	–	–	–	–	Granville.
–	–	–	–	–	–	–	–	–	–	–	–	Jersey.
52	52	52	52	–	52	–	52	–	52	52	53	St. Catherine's.
50	50	50	52	53	54	53	53	54	56	54	53	Eastbourne.
–	56	–	–	58	58	–	58	–	58	56	57	Ramsgate.
–	51	–	–	–	52	–	51	51	52	–	52	Cromer.
50	50½	–	–	50	51	49	50	49	50	49	50	Whitehaven.
–	48	–	–	–	47	–	48	–	48	–	49	Douglas.
–	52	–	–	–	52	–	53	–	51	–	53	Bangor.
–	52	–	–	–	53	–	52	–	49	–	54	Milford.
52	53	52	54	54	54	53	55	53	55	53	56	Queenstown.
–	–	–	–	–	55	–	55	–	53	–	54	Waterford.
–	–	–	–	–	–	–	–	–	–	–	–	Arklow.
50	–	–	–	–	50	–	50	–	50	48	–	Dublin.
–	54	–	–	–	–	–	56	–	56	57	–	Carlingford.
–	52	–	–	–	51	–	47	–	50	–	48	Carrickfergus.
–	49	–	–	–	49	–	49	–	49	–	49	Rathmullen.
–	44	–	–	–	44	–	44	–	44	–	44	Carn.
–	49	–	–	–	48	–	49	–	49	–	50	Rutland.
–	–	–	–	–	–	–	–	–	–	–	–	Belmullet.
–	51		–	–	52	–	52	–	52	–	53	Westport.
–	52	–	–	–	52	–	52	–	51	–	51	Galway.
–	56	–	57	–	–	–	50	–	50	–	55	Ballyheigh.
–	50	–	–	–	52	–	52	–	52	–	55	Pullendiva.
52	–	–	–	55	–	55	–	53	–	53	–	Kenmare.
47	48	–	–	47	48	46	47	46	47	45	46	North Berwick.
46	48	–	–	46	48	–	–	–	47	47	49	Aberdeen.
47	48	–	–	49	49	49	50	49	50	49	49	Cromarty.
–	47	–	–	–	48	–	48	–	48	–	46	Greenock
–	50	–	–	–	50	–	50	–	51	–	50	Portpatrick.

EXPLANATIONS.

E.C.I. S.C.I. } In like manner denote the east,
E.C.E. N.C.I. } south, or north coasts of
S.C.E. N.C.S } these countries.

[*continued.*

ABSTRACT of the TABLES of TEMPERATURE

MAY.

Locality.	Situation.	Latitude.	21.		22.		23.		24.		25.	
			A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Arcachon, .	W. C. F.	—	–	61	–	61	–	61	–	61	–	62
Cougre, . .	do.	—	–	–	–	–	–	–	–	–	–	–
Auray, . .	do.	—	59	59	60	60	61	61	61	61	60	60
Granville, .	do.	—	–	–	–	–	–	–	–	59	58	59
Jersey, . .	Channel	—	–	–	–	–	–	–	–	–	–	–
St. Catherine's,	S. C. E.	50/50	52	53	53	53	–	–	46	47	53	54
Eastbourne, .	do.	—	51	51	55	56	–	–	55	56	56	56
Ramsgate. .	S. E. C. E.	50/75	56	57	57	58	–	–	56	58	56	58
Cromer, . .	E. C. E.	52/70	–	53	–	53	–	–	–	52	–	53
Whitehaven, .	W. C. E.	54/50	50	51	50	51	–	–	50	50½	50	50
Douglas, . .	E. C. Man	54/20	–	49	–	50	–	–	–	50	–	49
Bangor, . .	W. C. W.	53/20	–	51	–	52	–	–	–	53	–	53
Milford, . .	do.	51/30	–	54	–	55	–	–	–	53	–	55
Queenstown, .	S. C. I.	51/50	53	56	53	56	–	–	53	56	53	57
Waterford, .	do.	52/10	–	54	–	54	–	–	–	65	–	64
Arklow, . .	E. C. I.	—	–	–	–	–	–	–	–	–	–	–
Dublin, . .	do.	53/20	–	50	–	50	–	–	–	50½	–	50½
Carlingford, .	do.	54/	58	–	–	56	54	–	–	55	–	55
Carrickfergus, .	do.	54/50	–	52	–	53	–	–	–	63	–	62
Rathmullen, .	N. C. I.	55/5	–	50	–	50	–	–	–	53	–	51
Carn, . .	do.	55/17	–	46	–	46	–	–	–	46	–	46
Rutland, . .	do.	54/58	–	50	–	49	–	–	–	50	–	51
Belmullet,	W. C. I.	54/10	–	–	–	–	–	–	–	–	–	–
Westport, .	do.	53/45	–	53	–	53	–	–	–	55	–	54
Galway, . .	do.	53/10	–	52	52	–	–	–	–	52	–	52
Ballyheigh, .	do.	52/20	–	57	–	60	–	–	–	60	–	59
Pullendiva, .	do.	54/20	–	55	–	56	–	–	–	53	–	53
Kenmare, .	S. W. C. I.	51/50	55	–	55	–	–	–	56	–	55	–
North Berwick,	E. C. S.	—	46	48	48	50	–	–	48	50	47	48
Aberdeen, .	do.	—	48	49	49	50	–	–	48	50	47	48
Cromarty, .	N. E. C. S.	—	48	48	48	48	–	–	49	50	49	50
Greenock, .	W. C. S.	—	–	47	–	50	–	–	–	49	–	49
Portpatrick, .	do.	—	–	50	–	52	–	–	–	52	–	51

for month of MAY, 1869—*continued.*

MAY.

26.		27.		28.		29.		30.		31.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	62	–	62	–	62	–	62	–	62	–	62	Arcachon.
–	–	–	–	–	–	–	–	–	–	–	–	Cougre.
61	62	61	61	61	62	61	61	60	60	61	61	Auray.
58	58	58	59	57	58	57	57	57	57	58	58	Granville.
–	–	–	–	–	–	–	–	–	–	–	–	Jersey.
54	55	53	55	52	53	51	50	–	–	52	54	St. Catherine's.
57	57	57	57	55	55	52	52	–	–	53	54	Eastbourne.
57	59	52	54	–	52	–	52	–	–	54	55	Ramsgate.
–	52	–	49	–	50	–	49	–	–	–	50	Cromer.
50	51	50	51	51	51½	51	51	–	–	51	51½	Whitehaven.
–	49	–	49	–	49	–	50	–	–	–	50	Douglas.
–	50	–	50	–	51	–	51	–	–	–	52	Bangor.
–	55	–	52	–	51	–	51	–	–	–	53	Milford.
51	54	51	53	50	52	52	54	–	–	54	56	Queenstown.
–	63	–	64	–	63	–	63	–	–	–	63	Waterford.
–	–	–	–	–	–	–	–	–	–	–	–	Arklow.
50	–	50	–	–	50	–	50	–	–	50½	–	Dublin.
–	57	–	56	–	56	–	57	–	–	–	56	Carlingford.
–	62	–	64	–	61	–	61	–	–	–	63	Carrickfergus.
–	50	–	48	–	49	–	51	–	–	–	52	Rathmullen.
–	41	–	45	–	39	–	50	–	–	–	45	Carn.
–	50	–	49	–	50	–	50	–	–	–	49	Rutland.
–	–	–	–	–	–	–	–	–	–	–	–	Belmullet.
–	53	–	50	–	53	–	54½	–	–	–	55	Westport.
–	53	–	50	–	51	–	50	–	–	–	53	Galway.
–	56	–	51	–	57	–	57	–	–	–	61	Ballyheigh.
–	52	–	49	–	51	–	52	–	–	–	54	Pullendiva.
52	–	53	–	51	–	53	–	–	–	54	–	Kenmare.
48	49	–	48	–	48	48	50	–	–	49	50	North Berwick.
48	48	47	48	47	48	46	48	–	–	48	49	Aberdeen.
49	50	49	49	49	50	49	50	–	–	49	50	Cromarty.
–	47	–	49	–	49	–	49	–	–	–	52	Greenock.
–	51	–	51	–	51	–	52	–	–	–	50	Portpatrick.

Abstract of the Tables of Temperature

JUNE.

Locality.	Situation.	Latitude.	1.		2.		3.		4.		5.		6.	
			A.	B.	A.	B.	A.	B.	A	B.	A.	B.	A.	B.
Arcachon,	W. C. F.	—	–	62	–	62	–	63	–	63	–	64	–	64
Cougre,	do.	—	–	–	–	–	–	–	–		–	–	–	–
Auray,	do.	—	60	60	60	61	61	61	60	61	62	63	63	64
Gorvather,	do.	—	60	61	60	62	60	62	60	61	68	69	62	62
Granville,	do.	—	58	58	58	58	59	59	59	59	60	60	60	61
Jersey,	Channel	—	–	56	–	58	–	59	–	57	–	59	–	–
St. Catherine's,	E. C. E.	50/50	53	55	53	55	53	55	54	55	64	54	–	–
Eastbourne,	do.	—	55	56	55	56	56	56	55	57	55	55	–	–
Ramsgate,	S. E. C. E.	50/75	56	57	55	57	55	57	56	53	58	59	–	–
Cromer,	E. C. E.	52/70	–	52	–	53	–	54	52	55	53	55	–	–
Whitehaven,	W. C. E.	54/50	50	51	51	52	51	51	51	52	52	52	–	–
Douglas,	E. C. Man	54/20	–	51	–	50	–	51	–	53	–	53	–	–
Bangor,	W. C. W.	53/20	–	56	–	55	–	54	–	56	–	56	–	–
Milford,	do.	51/30	–	55	–	54	–	55	–	57	–	60	–	–
Queenstown,	S. C. I.	51/50	57	58	56	59	56	58	54	56	56	56	–	–
Waterford,	do.	52/10	–	57	–	57	–	56	–	56	–	57	–	–
Arklow,	E. C. I.	—	50	52	50	56	50	52	51	50	50	50	–	–
Dublin,	do.	53/20	–	52	–	52	–	52	–	52	–	51	–	–
Carlingford,	do.	54/	–	57	55	–	56	–	56	–	58	–	–	–
Carrickfergus,	do.	54/50.	–	57	–	56	–	52	–	53	–	54	–	–
Rathmullen,	N. C. I.	55/5	–	52	–	52	–	53	–	54	–	54	–	–
Carn,	do.	55/17	–	45	–	47	–	46	–	47	–	48	–	–
Rutland,	do.	54/58	–	51	–	52	–	52	–	54	–	54	–	–
Belmullet,	W. C. I.	54/10	–	–	–	–	–	–	–	–	–	–	–	–
Westport,	do.	53/45	–	56	–	56	–	56	–	56	–	57	–	–
Galway,	do.	53/10	–	54	–	55	–	55	–	55	–	56	–	–
Ballyheigh,	do.	52/20	–	59	–	59	–	59	–	59	–	57	–	–
Pullendiva,	do.	54/20	–	54	–	54	–	54	–	55	–	56	–	–
Kenmare,	S. W. C. I.	51/50	54	–	54	–	53	–	55	–	54	–	–	–
North Berwick,	E. C. S.	—	49	50	50	51	51	52	51	52	52	53	–	–
Aberdeen,	do.	—	48	48	48	50	49	50	50	49	49	50	–	–
Cromarty,	N. E. C. S.	—	49	51	52	52	50	52	50	52	51	52	–	–
Greenock,	W. C. S.	—	–	52	–	52	–	56	–	56	–	57	–	–
Portpatrick,	do.	—	52	53	–	53	–	53	–	53	–	53	–	–

for month of JUNE, 1869.

JUNE.

7.		8.		9.		10.		11.		12.		13.		14.		15.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	65	–	66	–	66	–	66	–	66	–	66	–	66	–	66	–	65	Arcachon.
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Cougre.
63	65	63	64	63	63	62	62	62	63	64	65	65	66	62	62	63	63	Auray.
60	67	67	69	67	68	65	66	62	63	–	–	61	62	61	62	61	61	Gorvather.
59	60	60	61	60	61	60	61	59	59	59	59	59	59	59	60	59	59	Granville.
–	59	–	61	–	60	–	58	–	58	–	59	–	–	–	58	–	56	Jersey.
55	56	55	57	55	57	55	57	56	57	56	57	–	–	57	58	–	58	St. Catherine's.
57	59	59	58	59	61	59	60	59	59	58	59	–	–	58	58	58	59	Eastbourne.
61	63	60	61	59	60	59	60	57	59	58	59	–	–	58	59	–	58	Ramsgate.
–	54	–	56	–	56	–	55	–	54	–	56	–	–	–	54	–	55	Cromer.
52	53	53	54	54	55	55	55	55	55	56	56	–	–	56	56	56	56	Whitehaven.
–	52	–	53	–	51	–	52	–	52	–	53	–	–	–	52	51	52	Douglas.
–	58	–	56	–	58	–	57	–	57	–	56	–	–	–	55	–	51	Bangor.
–	59	–	55	–	57	–	58	–	57	–	57	–	–	–	55	–	55	Milford.
56	58	59	62	60	64	62	64	62	64	61	62	–	–	59	60	57	59	Queenstown.
–	57	–	58	–	61	–	62	–	61	–	59	–	–	–	59	–	59	Waterford.
52	51	50	52	52	54	–	–	51	50	–	–	–	–	50	52	–	–	Arklow.
–	52	–	52	52	52	52	52	–	52	–	52	–	–	–	52	–	52	Dublin.
–	63	62	–	62	–	–	63	60	–	–	62	–	–	–	61	–	60	Carlingford.
–	58	–	55	–	57	–	55	–	56	–	55	–	–	–	57	–	54	Carrickfergus.
–	55	–	55	–	37	–	56	–	56	–	54	–	–	–	54	–	53	Rathmullen.
–	49	–	49	–	49	–	51	–	50	–	50	–	–	–	50	–	50	Carn.
–	54	–	55	–	55	–	54	–	56	–	54	–	–	–	53	–	53	Rutland.
–	–	55	58	58	58	58	58	55	56	55	56	–	–	54	56	56	56	Belmullet.
–	59	–	63	–	63	–	62	–	64	–	63	–	–	–	59	–	63	Westport.
–	57	–	58	–	61	–	65	–	58	–	57	–	–	–	56	–	55	Galway.
–	59	–	65	–	67	–	73	–	68	–	65	–	–	–	61	–	59	Ballyheigh.
–	54	–	56	–	53	–	56	–	54	–	56	–	–	–	56	–	56	Pullendiva.
–	–	–	–	60	–	59	–	56	–	58	–	–	–	58	–	57	–	Kenmare.
52	54	51	54	52	53	52	53	52	52	52	52	–	–	51	52	–	47	North Berwick.
50	53	49	51	–	49	–	48	49	50	49	50	–	–	50	50	50	59	Aberdeen.
52	52	51	52	50	51	49	51	49	51	50	50	–	–	51	52	51	54	Cromarty.
–	55	–	53	–	52	–	53	–	53	–	53	–	–	–	56	–	51	Greenock.
–	53	–	53	–	54	–	54	–	53	–	55	–	–	–	54	–	54	Portpatrick.

[continued.

Abstract of the Tables of Temperature

JUNE.

Locality.	Situation.	Latitude.	16.		17.		18.		19.		20.		21.	
			A.	B.	A.	B.	A.	B	A	B.	A.	B.	A.	B.
Arcachon,	W. C. F.	—	–	64	–	64	–	64	–	64	–	64	–	64
Cougre,	do.	—	–	–	61	62	62	63	62	63	62	63	61	62
Auray,	do.	—	61	61	61	61	61	61	61	61	62	62	62	63
Gorvather,	do.	—	61	62	61	61	61	61	61	62	62	62	60	62
Granville,	do.	—	59	59	59	59	59	59	59	59	59	59	59	59
Jersey,	Channel	—	–	57	56	58	–	58	–	58	–	–	–	58
St. Catherine's,	E C. E.	50/50	–	58	57	58	58	58	58	58	–	–	58	58
Eastbourne,	do.	—	57	56	57	57	57	57	57	58	–	–	57	57
Ramsgate,	S. E. C. E.	50/75	–	58	56	57	57	59	57	59	–	–	57	59
Cromer,	E. C. E.	52/70	–	53	–	54	–	52	–	52	–	–	–	55
Whitehaven,	W. C. E.	54/50	56	56	55	56	56	57	56	57	–	–	56	57
Douglas,	E. C. Man	54/20	51	53	52	54	52	54	53	55	–	–	53	55
Bangor,	W. C. W.	53/20	–	54	–	54	–	54	–	56	–	–	–	58
Milford,	do.	51/30	–	57	–	57	–	55	–	56	–	–	–	59
Queenstown,	S. C. I.	51/50	59	60	61	63	62	64	60	62	–	–	61	64
Waterford,	do.	52/10.	–	60	–	57	–	57	–	57	–	–	–	59
Arklow,	E. C. I.	—	52	50	50	50	50	52	52	50	–	–	52	50
Dublin,	do.	53/20	–	52	52	52	–	52	53	–	–	–	52	–
Carlingford,	do.	54/	–	60	–	59	–	59	56	–	57	–	–	63
Carrickfergus,	do.	54/50	–	52	–	56	–	54	–	55	–	–	-	54
Rathmullen,	N. C. I.	55/5	–	56	–	58	–	55	–	58	–	–	–	59
Carn,	do.	55/17	–	48	–	50	–	50	–	50	–	–	–	50
Rutland,	do.	54/58	–	54	–	54	–	55	–	56	–	–	–	56
Belmullet,	W. C. I.	54/10	56	56	55	58	54	57	55	56	–	–	58	57
Westport,	do.	53/45	–	63	–	63	–	58	–	60	–	–	–	58
Galway,	do.	53/10	–	58	–	57	–	57	–	58	–	–	–	59
Ballyheigh,	do.	52/20	–	59	–	60	–	59	–	60	–	–	–	65
Pullendiva,	do.	54/20	–	56	–	56	–	56	–	58	–	–	–	58
Kenmare,	S. W. C. I.	51/50	57	–	57	–	57	–	58	–	–	–	57	–
North Berwick,	E. C. S.	—	–	50	51	50	51	52	51	53	–	–	51	53
Aberdeen,	do.	—	50	52	50	51	51	53	52	54	–	–	50	50
Cromarty,	N. E. C. S.	—	53	53	52	52	52	52	52	52	–	–	52	52
Greenock,	W. C. S.	—	–	52	–	53	–	56	–	55	–	–	–	55
Portpatrick,	do.	—	–	54	–	55	–	54	–	54	–	–	–	55

for month of JUNE, 1869—*continued.*

JUNE.

22.		23.		24.		25.		26.		27.		28.		29.		30.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	64	–	64	–	64	–	64	–	64	–	65	–	66	–	66	–	66	Arcachon.
61	62	63	64	65	66	65	65	64	65	65	67	64	67	64	65	61	63	Cougre.
62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	Auray.
61	63	62	64	62	64	62	64	60	61	61	63	63	65	63	65	63	64	Gorvather.
59	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	Granville.
–	60	–	60	–	60	–	60	–	60	–	–	–	60	58	60	–	58	Jersey.
–	–	–	–	58	59	57	59	57	59	58	60	58	60	58	60	58	60	St. Catherine's.
57	57	58	58	57	58	57	58	58	59	–	–	60	61	60	60	61	61	Eastbourne.
58	59	58	59	59	60	58	59	59	60	–	–	59	60	59	60	58	59	Ramsgate.
–	56	–	57	–	58	59	56	59	56	–	–	–	59	–	58	–	58	Cromer.
57	57	57	57	57	58	58	59	58	59	–	–	59	59	59	59	59	60	Whitehaven.
53	54	53	53	53	53	53	55	53	55	–	–	55	56	55	56	56	57	Douglas.
–	61	–	59	–	59	–	60	–	60	–	–	–	63	–	63	–	62	Bangor.
–	55	–	56	–	57	–	58	–	60	–	–	–	62	–	59	–	59	Milford.
62	64	63	64	64	66	63	66	65	66	–	–	68	70	69	71	71	80	Queenstown.
–	59	–	58	–	65	–	64	–	63	–	–	–	63	–	63	–	63	Waterford.
52	50	52	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Arklow.
53	–	–	53	–	53	53	–	–	53	–	–	–	53	–	54	–	54	Dublin.
–	63	–	64	–	–	60	–	62	–	–	1	–	63	–	63	–	65	Carlingford.
–	57	–	58	–	58	–	57	–	58	–	–	–	60	–	60	–	60	Carrickfergus.
–	61	–	62	–	64	–	66	–	66	–	–	–	67	–	68	–	68	Rathmullen.
–	51	–	51	–	52	–	52	–	52	–	–	–	59	–	53	–	58	Carn.
–	57	–	57	–	58	–	59	–	59	–	–	–	59	–	59	–	60	Rutland.
55	57	55	55	58	59	59	59	58	61	–	–	58	55	58	60	58	61	Belmullet.
–	57	–	59	–	61	–	67	–	67	–	–	–	65	–	66	–	66	Westport.
–	58	–	58	–	61	–	62	–	64	–	–	–	64	–	64	–	63	Galway.
–	64	–	64	–	63	–	63	–	68	–	–	–	73	–	76	–	70	Ballyheigh.
–	58	–	58	–	59	–	61	–	61	–	–	–	62	–	64	–	64	Pullendiva.
58	–	58	–	58	–	58	–	58	–	–	–	60	–	62	–	62	–	Kenmare.
51	53	52	54	52	54	53	54	53	55	–	–	53	55	53	55	52	54	North Berwick.
50	53	50	54	52	54	53	55	52	54	–	–	51	52	51	52	52	56	Aberdeen.
52	52	51	54	53	57	52	57	53	58	–	–	54	59	56	57	56	58	Cromarty.
–	56	–	57	–	58	–	60	–	58	–	–	–	58	–	59	–	59	Greenock.
–	55	–	54	–	55	54	56	–	57	–	–	–	58	53	58	–	58	Portpatrick.

ABSTRACT of the TABLES of TEMPERATURE

JULY.

Locality.	Situation.	Latitude.	1.		2.		3.		4.		5.		6.	
			A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Arcachon,	W. C. F.	—	–	66	–	66	–	66	–	66	–	66	–	66
Cougre,	do.	—	–	63	–	63	64	66	65	67	65	67	66	67
Auray,	do.	—	62	62	62	62	62	62	62	62	62	62	64	65
Granville,	do.	—	59	60	60	60	60	61	61	61	60	61	61	61
Jersey,	Channel	—	–	59	–	58	–	59	–	–	–	62	–	62
St. Catherine's,	E. C. E.	50/50	57	58	57	59	57	59	–	–	59	60	59	60
Eastbourne,	do.	—	60	60	60	60	60	61	–	–	60	62	–	–
Ramsgate,	S. E. C. E.	50/75	–	59	–	59	60	61	–	–	61	62	61	62
Cromer,	E. C. E.	52/70	56	58	56	58	56	58	–	–	–	59	–	65
Whitehaven,	W. C. E.	54/50	59	59	60	60	60	60	–	–	59	60	60	60
Douglas,	E. C. Man	54/20	55	56	55	56	55	57	–	–	55	57	56	58
Bangor,	W. C. W.	53/20	–	62	–	64	–	62	–	–	–	62	–	63
Milford,	do.	51/30	–	62	–	60	–	62	–	–	–	60	–	62
Queenstown,	S. C. I.	51/50	71	79	71	80	70	78	–	–	68	76	66	71
Waterford,	do.	52/10	–	–	–	63	–	64	–	–	–	65	–	63
Arklow,	E. C. I.	—	–	–	–	–	58	54	–	–	58	54	–	–
Dublin,	do.	53/20	53	–	53	–	53	–	–	–	54	–	54	–
Carlingford,	do.	54/	–	66	–	67	65	–	–	–	66	–	–	66
Carrickfergus,	do.	54/50	–	61	–	61	–	64	–	–	–	63	–	62
Rathmullen,	N. C. I.	55/5	–	68	–	69	–	69	–	–	–	66	–	67
Carn,	do.	55/17	–	54	–	56	–	56	–	–	–	57	–	61
Rutland,	do.	54/58	–	60	–	61	–	61	–	–	–	62	–	61
Belmullet,	W. C. I.	54/10	58	57	58	57	63	62	–	–	61	60	58	65
Westport,	do.	53/45	–	65	–	66	–	66	–	–	–	65	–	65
Galway.	do.	53/10	–	64	–	65	–	66	–	–	–	62	–	62
Ballyheigh,	do.	52/20	–	68	–	73	–	74	–	–	–	70	–	66
Pullendiva,	do.	54/20	–	65	–	66	–	66	–	–	–	66	–	66
Kenmare,	S. W. C. I.	51/50	54	–	54	–	53	–	–	–	55	–	54	–
North Berwick,	E. C. S.	—	53	55	54	55	54	56	–	–	55	56	–	57
Aberdeen,	do.	—	52	52	51	53	52	54	–	–	52	54	52	53
Cromarty,	N. E. C. S.	—	58	61	58	60	57	58	–	–	58	59	56	58
Greenock,	W. C. S.	—	–	60	–	60	–	64	–	–	–	60	–	63
Portpatrick,	do.	—	–	56	–	56	–	56	–	–	–	56	–	57

for month of JULY, 1869.

JULY.

7.		8.		9.		10.		11.		12.		13.		14.		15.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	66	–	66	–	66	–	66	–	66	–	66	–	67	–	67	–	67	Arcachon.
65	66	65	67	66	67	66	67	66	68	66	68	66	68	66	69	66	69	Cougre.
63	65	65	65	65	65	65	65	66	66	67	67	66	67	66	67	67	67	Auray.
60	61	61	61	61	61	61	61	–	–	61	61	61	61	61	62	61	62	Granville.
–	64	–	62	–	63	–	62	–	–	–	62	–	63	–	63	–	63	Jersey.
59	60	59	60	60	61	60	62	60	62	60	62	60	62	60	62	61	62	St. Catherine's.
58	60	60	60	60	61	61	62	–	–	65	66	64	65	64	65	63	64	Eastbourne.
61	62	62	63	62	63	61	62	–	–	61	62	62	63	62	63	62	63	Ramsgate.
–	66	–	66	–	62	–	62	–	–	–	64	–	61	–	62	–	62	Cromer.
–	60	59	60	60	60	61	62	–	–	62	63	–	61	61	61	62	62	Whitehaven.
56	57	56	58	56	58	56	58	–	–	57	58	57	59	57	60	57	60	Douglas.
–	62	–	61	–	61	–	61	–	–	–	62	–	59	–	61	–	62	Bangor.
–	60	–	60	–	62	–	61	–	–	–	61	–	59	–	62	–	63	Milford.
64	70	63	68	64	67	64	69	–	–	65	69	66	70	67	70	64	69	Queenstown.
–	63	–	63	–	65	–	65	–	–	–	66	–	66	–	64	–	62	Waterford.
–	–	–	–	–	–	60	50	–	–	58	50	60	52	58	54	58	54	Arklow.
–	53	–	54	–	54	–	54	–	–	–	54	–	54	54	–	54	–	Dublin.
	66	–	66	–	65	–	66	–	–	64	–	–	66	–	65	65	–	Carlingford.
–	60	–	62	–	60	–	60	–	–		62	–	59	–	60	–	64	Carrickfergus.
–	68	–	70	–	70	–	68	–	–	–	67	–	66	–	65	–	67	Rathmullen.
–	57	–	63	–	54	–	56	–	–	–	59	–	52	–	52	–	54	Carn.
–	62	–	61	–	61	–	64	–	–	–	64	–	60	–	59	–	59	Rutland.
–	–	–	–	–	–	56	58	–	–	60	58	59	60	58	60	62	61	Belmullet.
–	65	–	65	–	63	–	63	–	–	–	65	–	63	–	62	–	62	Westport.
–	65	–	64	–	66	–	63	–	–	–	64	–	64	–	64	–	64	Galway.
–	66	–	65	–	67	–	70	–	–	–	70	–	66	–	67	–	68	Ballyheigh.
–	64	–	62	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Pullendiva.
–	–	–	–	60	–	59	–	–	–	56	–	58	–	58	–	57	–	Kenmare.
56	57	56	58	–	57	57	58	–	–	56	58	56	58	–	57	–	57	North Berwick.
51	52	51	54	51	54	52	54	–	–	51	53	51	53	51	53	51	53	Aberdeen.
54	55	54	55	56	57	52	54	–	–	54	57	53	55	53	55	55	58	Cromarty.
–	64	–	63	–	61	–	63	–	–	–	59	–	60	–	59	–	60	Greenock.
–	56	–	56	–	56	–	58	–	–	–	57	–	57	–	58	–	58	Portpatrick.

[continued.

ABSTRACT of the TABLES of TEMPERATURE

JULY.

Locality.	Situation.	Latitude.	16.		17.		18.		19.		20.		21.		22.	
			A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Arcachon,	W. C. F.	—	–	67	–	67	–	67	–	67	–	67	–	67	–	67
Cougre,	do.	—	66	69	–	–	66	67	66	67	67	68	67	68	67	67
Auray,	do.	—	66	66	66	66	66	67	67	67	67	67	68	69	67	68
Granville,	do.	—	62	63	62	64	63	64	62	64	62	64	63	64	63	64
Jersey,	Channel	—	–	65	–	66	–	–	–	66	–	65	–	65	–	66
St. Catherine's,	E. C. E.	50/50	61	62	61	63	–	–	62	64	62	64	62	64	62	64
Eastbourne,	do.	—	65	66	67	68	–	–	–	–	67	67	65	66	66	67
Ramsgate,	S. E. C. E.	50/75	63	64	63	65	–	–	62	63	62	63	62	63	63	64
Cromer,	E. C. E.	52/70	–	66	–	67	–	–	–	62	–	64	–	66	–	66
Whitehaven,	W. C. E.	54/50	62	62	63	64	–	–	64	65	64	65	64	65	63	64
Douglas,	E. C. Man	54/20	58	61	59	61	–	–	59	62	59	60	59	60	59	60
Bangor,	W. C. W.	53/20	–	61	–	65	–	–	–	64	–	65	–	64	–	63
Milford,	do.	51/30	–	62	–	63	–	–	–	61	–	63	–	63	–	60
Queenstown,	S. C. I.	51/50	60	64	62	65	–	–	61	65	59	64	56	66	54	64
Waterford,	do.	52/10	–	64	–	66	–	–	–	66	–	65	–	64	–	65
Arklow,	E. C. I.	—	60	56	58	54	–	–	–	–	60	56	58	54	60	52
Dublin,	do.	53/20	54	–	54	–	–	–	60	–	54	–	–	60	60	–
Carlingford,	do.	54/	64	–	–	67	–	–	67	–	–	70	–	68	–	72
Carrickfergus,	do.	54/50	–	60	–	66	–	–	–	60	–	–	–	64	–	–
Rathmullen,	N. C. I.	55/5	–	68	–	70	–	–	–	70	–	71	–	72	–	70
Carn,	do.	55/17	–	57	–	57	–	–	–	58	–	65	–	59	–	58
Rutland,	do.	54/58	–	62	–	64	–	–	–	65	–	65	–	64	–	65
Belmullet,	W. C. I.	54/10	63	64	61	62	–	–	60	62	60	62	61	63	60	62
Westport,	do.	53/45	–	64	–	64	–	–	–	67	–	67	–	68	–	66
Galway,	do.	53/10	–	65	–	65	–	–	–	66	–	67	–	66	–	64
Ballyheigh,	do.	52/20	–	70	–	69	–	–	–	74	–	76	–	69	–	69
Pullendiva,	do.	54/20	–	–	–	62	–	–	–	62	–	64	–	64	–	62
Kenmare,	S. W. C. I.	51/50	57	–	57	–	–	–	58	–	57	–	58	–	58	–
NorthBerwick,	E. C. S.	—	55	57	56	58	–	–	55	56	54	55	55	56	58	57
Aberdeen,	do.	—	51	52	53	52	–	–	52	54	52	53	52	54	52	54
Cromarty,	N. E. C. S.	—	55	60	55	57	–	–	56	57	56	58	58	59	54	56
Greenock,	W. C. S.	—	–	64	–	65	–	–	–	66	–	61	–	60	–	61
Portpatrick,	do.	—	–	58	56	59	–	–	–	58	–	59	–	58	–	58

for month of JULY, 1869.

JULY.

23.		24.		25.		26.		27.		28.		29.		30.		31.		Locality.
A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	
–	67	–	67	–	67	–	68	–	68	–	68	–	68	–	68	–	68	Arcachon.
67	67	66	67	65	65	65	65	65	65	–	–	–	–	–	–	–	–	Cougre.
67	68	67	68	68	68	67	68	67	67	67	67	66	67	65	66	65	66	Auray.
63	64	63	64	63	64	64	65	63	64	64	65	63	64	64	65	64	65	Granville.
–	64	–	64	–	–	–	64	–	64	–	65	–	65	–	64	–	65	Jersey.
62	63	62	64	–	–	63	64	63	64	63	63	63	64	–	64	–	64	St. Catherine's.
65	66	65	66	–	–	65	66	65	66	65	66	66	67	65	66	65	66	Eastbourne.
63	64	64	65	–	–	63	64	63	64	63	64	64	65	64	65	64	65	Ramsgate.
–	66	–	65	–	–	–	65	–	65	–	62	–	64	–	65	–	65	Cromer.
63	64	63	64	–	–	63	64	64	64	64	65	–	63	–	63	64	64	Whitehaven.
59	60	59	60	–	–	59	61	59	61	59	61	60	61	60	62	60	62	Douglas.
–	63	–	62	–	–	–	61	–	62	–	63	–	61	–	62	–	62	Bangor.
–	63	–	63	–	–	–	62	–	62	–	60	–	60	–	62	–	62	Milford.
53	61	51	60	–	–	50	61	52	59	49	53	48	53	45	49	41	46	Queenstown.
–	64	–	64	–	–	–	64	–	64	–	64	–	63	–	63	–	63	Waterford.
60	52	60	52	–	–	60	52	–	–	60	52	–	–	60	50	61	52	Arklow.
60	–	–	60	–	–	–	60	–	60	–	60	–	54	–	54	54	–	Dublin.
–	70	66	–	–	–	64	–	–	67	–	66	–	60	–	60	65	–	Carlingford.
–	62	–	63	–	–	–	62	–	62	–	64	–	61	–	61	–	63	Carrickfergus.
–	69	–	71	–	–	–	63	–	63	–	62	–	70	–	68	–	66	Rathmullen.
–	59	–	57	–	–	–	57	–	55	–	56	–	61	–	55	–	54	Carn.
–	64	–	64	–	–	–	65	–	65	–	64	–	64	–	65	–	64	Rutland.
60	62	61	62	–	–	62	62	60	62	60	61	60	61	60	60	60	60	Belmullet.
–	65	–	64	–	–	–	64	–	64	–	64	–	62	–	62	–	63	Westport.
–	65	–	65	–	–	–	64	–	64	–	64	–	63	–	62	–	63	Galway.
–	71	–	71	–	–	–	68	–	69	–	70	–	67	–	64	–	68	Ballyheigh.
–	62	–	61	–	–	–	61	–	62	–	62	–	62	–	62	–	62	Pullendiva.
58	–	58	–	–	–	58	–	58	–	60	–	62	–	62	–	62	–	Kenmare.
57	58	57	58	–	–	56	57	57	58	56	58	57	58	56	57	56	57	North Berwick.
53	54	53	56	–	–	53	55	52	54	53	54	53	55	53	55	54	55	Aberdeen.
58	59	56	57	–	–	56	57	56	57	56	58	56	58	58	59	57	58	Cromarty.
–	62	–	62	–	–	–	62	–	63	–	64	–	60	–	60	–	59	Greenock.
–	59	–	58	–	–	57	58	–	59	–	59	–	58	–	58	57	61	Portpatrick.

OBSERVATIONS ON THE TEMPERATURE OF THE SEA.

South Yarmouth Division.—St. Catherine's Point Station, Isle of Wight.

Taken by John Pepper, Chief Officer.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
13	59	59	½ mile	3 fathoms	High	NNW 2	This observation was taken at Brook.
14	60	58	¾ mile	11 fathoms	Ebb W.	NNE 4	Sea smooth.
15	60	59	½ mile	10 fathoms	do.	SW 6	Sea rough.
16	–	58	20 yards	5 feet	do.	WSW 7	Heavy sea.
17	59	58	¾ mile	11 fathoms	do.	WNW 4	Ground sea.
19	57	58	¾ mile	8 fathoms	Flood E.	N 4	do.
20	55	54	do.	9 fathoms	do.	N 4	Sea smooth.
21	55	54	½ mile	8 fathoms	do.	WNW 5	Heavy sea.
22	56	55	¾ mile	10 fathoms	do.	WNW 5	Heavy ground sea.
23	–	55	6 yards	3 feet	do.	NW 6	Very heavy sea.
24	–	54	do.	do.	do.	SW 8	do.
26	56	55	½ mile	9 fathoms	Low water	NW 5	Heavy ground sea.
27	55	53	do.	do.	Ebb W.	NW 5	Ground sea.
28	55	53	¾ mile	10 fathoms	do.	W 4	Sea smooth.
29	–	53	2 yards	2 feet	do.	NW 8	Very heavy sea.
30	54	53	½ mile	9 fathoms	do.	NW 5	Heavy ground sea.
31	55	53	do.	do.	do.	W 6	Heavy sea.

Eastbourne Division.—Holywell Station, Sussex.

Taken by William Snook, Chief Boatman, off Beachy Head.

Oct.				Fathoms.			
12	55	54	½ mile; 300 yds.	3 and 2	Ebb W.	S E	No oyster beds on this coast.
13	55	54	¾ mile; ¼ mile.	5 ,, 3½	do.	Calm	
14	55	54	1 mile; ¼ mile.	5 ,, 3	do	N	
15	54	53	½ mile; 300 yds.	4 ,, 2	Flood E.	SW	
16	54	53	¾ mile; 300 yds.	5 ,, 2	Ebb W.	W	
17	57	56	½ mile; 300 yds.	4 ,, 3	do.	NW	
19	57	56	1 mile; 200 yds.	5 ,, 2	Flood E.	N	
20	57	56	1 mile; 300 yds.	5 ,, 2	do.	N	
21	57	56	1 mile; 400 yds.	5 ,, 3	Ebb W.	NW	
22	57	56	1 mile; 200 yds.	5 ,, 2	Flood E.	W	
23	–	–	—	—	—	—	Coast impracticable for launching boat.
24							
26	–	56	200 yards	1½	Ebb W.	W	From the 26th instant this coast was impracticable for taking a boat outside, the reef running parallel to shore.
27	–	56	do.	2	do.	W	
28	–	56	300 yards	2½	do.	W	
29	–	56	do.	3	do.	SW	
30	–	55	do.	2½	do.	NW	
31	–	55	do.	3	do.	SW	

Ramsgate Division.—Kingsgate Station, Kent.

Taken by Navigating-Lieutenant Edward Mouribgan, R.N.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°		Fathoms.			
12	58	57½	$\frac{9}{10}$ of mile	7	½ ebb, S S E	S S E 2	Temperature at A taken in the same position each day at noon, $\frac{9}{10}$ of a sea mile from high water mark. No oyster banks in the vicinity.
13	59	58½	do.	7½	½ ebb, S S E	W 1	
14	59	57	do.	8	¼ ebb, N N W	N 5	
15	57	55½	do.	8¼	do.	S W 6	
16	59	57	do.	8½	1 hour ebb, N N W	S W 5	
17	59	56	do.	9	High water, N N W	W 3	
19	58	52	do.	8½	¾ flood, N N W	N W 4	
20	57½	52	do.	8¼	do.	N W 4	
21	58	52	do.	7½	½ flood, no current	N W 5	
22	56	51	do.	7¼	¼ flood, S S E	N W 3	
23	56	51	do.	7¼	Low water, S S E	S S W 5	
24	56	51	do.	7	¾ ebb, S S E	S S W 6	
26	55½	54½	do.	7½	½ ebb, no current	W 3	
27	55	48	do.	8	¼ ebb, N N W	N W 5	
28	52	49	do.	8½	do.	W 3	
29	52	50	do.	8½	High water, N N W	N W 6	
30	53	49	do.	8¾	do.	W 4	
31	53	50	do.	9	¾ flood, N N W	W S W 4	

Cromer Division.—Cromer Station, Norfolk.

Taken by William Frederick Hurrell, Chief Officer.

Oct.							
13	54	53	2 miles	5 fathoms	Low water	S W	
14	54	53	1 mile	do.	Ebb tide	N	
15	54	54	½ mile	4 fathoms	Flood S E	S W	
16	55	54	1 mile	5 fathoms	Ebb W	W by S	
17	53	52	2½ miles.	6 fathoms	Ebb N W	W S W	
19	–	48	Taken from the end of jetty.	1 fathom	—	W N W	Heavy surf, could not launch the boat.
20	–	48		do.	—	N E	
21	–	49		do.	—	W N W	
22	–	48		do.	—	N W	
23	48	47	1 mile	5 fathoms	High water	S W	
24	48	47	2 miles	6 fathoms	Flood S E	S S W	
26	–	–	—	—	—	—	Heavy sea on the coast, could not launch boat.
27							
28							
29							
30	48	47	1½ miles	5 fathoms	Ebb N W	W N W	
31	48	47	2 miles	6 fathoms	Ebb N W	W	

Fleetwood Division.—Whitehaven Station, Cumberlandshire.

Taken by Albourn Greenfield, Chief Officer, Second-class.

1868.	Temperature A. At Sea.	Temperature B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
14	49	49	1 mile	5½ fathoms	5 hrs. ebb SW	SSW	2 45 p.m.
15	51	50	1½ mile	10 fathoms	High water	WNW	10 30 a.m.
16	46	45½	1000 yards	3½ fathoms	5½ ho. fld. NE	SW	10 45 a.m.
17	46	48	Inshore	4 feet	½ ebb SW	WNW	3 p.m., heavy sea.
19	49	49	½ mile	4 fathoms	4¾ ho. fld. NE	N E	Noon.
20	48	47	1000 yards	3¼ fathoms	4 ho. fld. NE	S S E	do.
21	45	44	900 yards	do.	3¼ ho. fld. NE	NW	do.
22	46	44	1¼ mile	6½ fathoms	2¾ ho. fld. NE	NNW	do.
23	46	43	Inshore	4 feet	1¾ ho. fld. NE	NW	Noon, heavy sea.
24	46	44	do.	do.	Low water	S	do.
26	46	43	do.	do.	4½ ho. ebb SW	WNW	do.
27	44	43	900 yards	3½ fathoms	3½ ho. ebb SW	N by W	do.
28	44	43	¾ mile	4 fathoms	2¾ ho. ebb SW	SW	do.
29	44	43	Inshore	4 feet	2 ho. ebb SW	NW	do.
30	43	43	900 yards	3¼ fathoms	1½ ho. ebb SW	WNW	do.
31	45	43	1¼ mile	6¾ fathoms	1 hour's ebb	SW	do.

Bangor Division, Carnarvon.—Holyhead Station, Isle of Anglesea.

Oct.							
12	–	54	100 yards	2 fathoms	Ebb	SW 2 to 3 C	
13	–	53⅓	do.	do.	—	NW 3 C	
14	–	54¼	do.	do.	—	SW 2	
15	–	53½	do.	do.	—	W by N	Clear.
16	–	53½	do.	do.	—	WSW 4 to 5	Cloudy.
17	–	53	do.	do.	—	WNW 5 C	
19	–	52½	do.	do.	High water	NNW 6 to 7 C	
20	–	53	do.	do.	Flood	S 3 to 4 C	
21	–	53¼	do.	do.	—	NW 4	Clear.
22	–	54	do.	do.	—	W 2 to 3	
23	–	53½	do.	do.	—	WNW 5	Cloudy.
24	–	53½	do.	do.	—	SW by 6	Rain.
26	–	52½	do.	do.	Flood	WNW 4	Cloudy.
27	–	52⅓	do.	do.	Low water	WNW 5	do.
28	–	52¾	do.	do.	Ebb	W by S 4	do.
29	–	52¼	do.	do.	do.	WNW 6	do.
30	–	52½	do.	do.	do.	W 4	do.
31	–	52¼	do.	do.	do.	SW by W 5	Rain.

Milford Division.—Goodwick Station, Pembrokeshire.

Taken by John G. Annal, Chief Officer, Second-class.

1868	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
19	55	No	Taken at the	From 14 feet	4½ hrs. flood	N 6	Observations taken at Goodwick, being the nearest coast-guard station to St. Brides' Bay.
20	55	oyster	Pier.	at high water	5¼ hrs. flood.	SW 4	
21	55	banks.	do.	to 2 feet at	High water	NW 6	
22	54	do.	do.	low water.	¾ hours ebb	NW 5	
23	54	do.	do.	do.	1½ hours ebb	NW 6	
24	54	do.	do.	do.	2¼ hours ebb	WSW 6	
26	54	do.	do.	do.	3¾ hours ebb	WNW 5	
27	54	do.	do.	do.	4½ hours ebb	NW 5	
28	54	do.	do.	do.	5¼ hours ebb	WSW 5	
29	54	do.	do.	do.	Low water	WNW 6	
30	54	do.	do.	do.	do.	WNW 5	
31	54	do.	do.	do.	do.	W 7	

Bridlington Division.—Filey Station, Yorkshire.

Taken by Nicholas Sweetman, Chief Officer.

Oct.			Yards.	Fathoms.			
16	–	50	200	2	Near low water, N	SW 5	Temperature taken at noon each day.
17	–	50	do.	2	Low water, N	W 4	
19	–	50	180	2	Near low water, N	W 2	No oyster banks in Filey Bay.
20	–	50	150	3	¾ ebb, N	NNW 3	
21	–	50	do.	2½	do.	W 3	
22	–	50	120	2	½ ebb, N	NW 4	
23	–	48	100	2	¼ ebb, N	S 6	
24	–	45	do.	2	do.	S 6	
26	–	51	300	1½	High water	W 3	
27	–	46	35	1½	do.	NW 4	
28	–	46	50	2	¾ flood, S	WSW 3	
29	–	47	70	2½	½ flood, S	WNW 5	
30	–	48	90	2⅓	do.	W 4	
31	–	52	120	2½	¼ flood, S	WSW 5	

Queenstown Division.—Crosshaven Station, Co. Cork.

Taken by W. H. Wright, Lieutenant, R.N.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
12	57	58	¼ mile; 30 yds.	8 fath.; 9 ft.	Ebb, S; ½ ebb, E	SW	
13	57	57	½ mile; 10 yds.	15 fath.; 2 ft.	½ flood, N; ½ flood, W	NW	
14	57	57	¼ mile; 6 yds.	5½ fath.; 2 ft.	¾ flood, NW	W	
15	57	56	300 yds.; 3 yds.	4 fath.; 2 ft.	N W	NW	
16	57	55	400 yds.; 4 yds.	4½ fath.; 3 ft.	¾ flood, W	NW	
17	56	54	300 yds.; 6 yds.	4 fth.; 1 fth.	½ flood, W	NW	
19	53	53	200 yds.; 6 yds.	3½ fath.; 3 ft.	¾ ebb, E	NW	
20	53	53	300 yds.; 6 yds.	3½ fath.; 4 ft.	do.	SW	
21	52	51	300 yds.; 6 yds.	3½ fath.; 4 ft.	½ ebb, E	NW	
22	52	51	400 yds.; 8 yds.	3½ fath.; 4 ft.	do.	SW	
23	53	52	300 yds.; 6 yds.	3 fath.; 3 ft.	do.	NW	
24	–	56	3 yards	2 feet.	¼ ebb, E	NW, fresh gale	
26	54	53	300 yds.; 6 ft.	3½ fath.; 3 ft.	¾ flood, W	W	
27	53	53	300 yds.; 4 ft.	do.	½ flood, W	NW	
28	54	53	300 yds.; 3 ft.	do.	do.	SW	
29	52	52	300 yds.; 4 ft.	6 fath.; 3 ft.	¼ flood, W	NW	
30	53	53	300 yds., 4 ft.	4½ fath.; 3 ft.	High water, W	W	
31	56	56	300 yds.; 3 ft.	4 fath.; 3 ft.	Low water	SW	

Waterford Division.—Tramore Station, Co. Waterford.

Taken by Richard Johns, Chief Boatman.

Oct.							
12	–	–	—	—	—	—	Not taken, in consequence of absence of Inspecting Commander when orders arrived.
13							
14	58	57	From the pier at Lady's Cove. Mr. Malcomson's oyster beds joining the back strand.	1 foot	1st qr flood E	SSW	Cloudy.
15	58	57		do.	½ flood E	WSW	Squally.
16	56	52		do.	do.	WNW	do.
17	55	48		do.	1st qr. flood E	NW	Cloudy.
19	54	48		do.	Last qr. ebb W	N	Blue sky.
20	55	46		do.	do.	WSW	Rain.
21	54	48		do.	½ ebb W	WNW	Cloudy.
22	54	48		do.	do.	W	do.
23	54	48		do.	do.	W	Squally.
24	55	46		do.	—	NW	do.
26	54	48		do.	½ flood E	WNW	do.
27	53	47		do.	do.	NW	Blue sky.
28	52	46		do.	do.	W	Rain.
29	53	47		do.	1st qr. flood E	WNW	Squally.
30	54	48		do.	do.	WNW	Cloudy.
31	53	47		do.	do.	WSW	Fog.

Arklow Division.—Arklow Station, Co. Wicklow.

Taken by Samuel Carr, Second-class Chief Officer.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
12	–	–	—	—	—	–	
13	54	–	1,000 yards	8 fathoms	¾ ebb	N E	
14	54	–	1,500 yards	do.	½ ebb	S S W	
15	52	–	1 mile	do.	¾ flood	S W by W	
16	53	–	2 miles	9 fathoms	High water	S S W	
17	53	–	2½ miles	do.	¼ ebb	S W	
19	52	–	3 miles	do.	High water	N W	
20	50	–	4 miles	do.	¾ flood	S W	
21	51	–	4½ miles	do.	½ flood	W N W	
22	52	–	5 miles	10 fathoms	¼ flood	S W	
23	–	–	—	—	—	–	
24	50	–	5½ miles	10 fathoms	Low water	W	
26	–	48	100 yards	2 fathoms	¼ flood	N W	
27	–	48	150 yards	do.	½ flood	W	
28	–	47	200 yards	2½ fathoms	¾ flood	S W	
29	–	48	do.	3 fathoms	High water	W	
30	–	50	250 yards	do.	¼ ebb	W	
31	50	–	300 yards	3½ fathoms	½ ebb	W S W	

Howth Division.—Howth Station, Co. Dublin.

Taken by Wm. Henry M'Kegg, Boatman.

Oct.				Fathoms.			
12	55	55	300 yards N E of lighthouse	4	¾ ebb N	S	Moderate breezes and cloudy.
13	55	55	do.	4¼	⅛ ebb S	WNW	do.
14	55	55	do.	5	¼ ebb S	S	Light breezes, and cloudy.
15	55	55	do.	5½	High wat. S	W	Fresh breezes and cloudy.
16	54	54	Pier head.	3½	do.	W	Fresh gales and squally.
17	53	53	do.	3½	do.	W	Strong breezes and cloudy.
19	51	51	do.	3½	do.	NW	Fresh gales and cloudy.
20	52	52	do.	3	¼ ebb S	SW	Fresh breezes and cloudy.
21	51	51	do.	3	do.	NW	Fresh gales and squally.
22	51	51	300 yards of lighthouse	4½	¼ flood N	W	Light breezes and hazy.
23	51	51	do.	4	Low water N	W	Strong breezes and squally.
24	51	51	Pier head	3	⅜ flood S	W	Strong gales and squally.
26	51	51	100 yards of pier head	3	½ ebb S	W	Fresh breezes and cloudy.
27	51	51	do.	3	do.	W	Moderate breezes and cloudy.
28	50	50	do.	3	do.	W	Fresh breezes and gloomy.
29	49	49	Pier head	3¼	¼ ebb S	W	Fresh gales and cloudy.
30	49	49	do.	3¼	do.	W	Strong breezes and cloudy.
31	51	51	do.	3½	High wat. S	SW	Moderate breezes and cloudy.

Carlingford Division.—Cranfield Point Station, Co. Down.

Taken by Daniel Collins, Chief Officer, at noon each day.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	° ′	° ′					
14	56 5	–	100 yards	8 feet	½ ebb	S S W	There are no oyster beds
15	–	56	do.	3 feet	2 hours ebb	W N W	near this station.
16	–	55 75	do.	do.	1 hour ebb	W N W	Fresh gales.
17	–	51 5	do.	4 feet	½ hour ebb	W N W	do.
19	51 75	–	½ mile	18 feet	High water	N W	Fresh breeze.
20	53 25	–	do.	20 feet	do.	S S W	do.
21	55	–	¼ mile	16 feet	¾ flood	W N W	do.
22	–	53 5	—	4 feet	½ flood	N W	do.
23	53	–	½ mile	18 feet	½ hour flood	W N W	do.
24	52 5	–	—	4 feet	Low water	N W	Strong gales.
26	52 75	–	¼ mile	2 fathoms	¾ ebb	W N W	Fresh breezes.
27	–	55	do.	5 feet	½ ebb	W N W	do.
28	–	50	do.	4 feet	2½ hours ebb	N W	Fresh gales.
29	–	52	do.	6 feet	2 hours ebb	N W	do.
30	–	52 5	do.	do.	1½ hours ebb	N W	Fresh breezes.
31	–	55 5	do.	do.	1 hour ebb	S W	

Received Thermometer on 14th October, 1868.

Carlingford Division.—O'Meath Station, Co. Down.

Taken by William Gray, Chief Boatman, in charge.

Oct.		°	Yards.	Feet.			
14	–	53	250	9	2 hours ebb	S	Moderate and fine.
15	–	53	400	14	1 hour ebb	W	Strong breezes and squally.
16	–	52	600	16	½ hour ebb	W	Fresh breezes and cloudy.
17	–	51	500	13	High water	NW	Strong breezes and cloudy.
19	–	48	500	13	4¾ flood	N	do.
20	–	48	600	13	4 flood	S	Strong breezes and overcast.
21	–	48	400	11	3¼ flood	NW	Moderate and clear.
22	–	48	300	9	2½ flood	SW	Light breezes and cloudy.
23	–	48	150	7	1¾ flood	NW	Moderate and cloudy.
24	–	48	150	5	1 flood	WNW	Fresh gales and heavy squalls.
26	–	48	150	6	4 ebb	NW	Moderate breezes and cloudy.
27	–	48	20	4	3 ebb	NW	Moderate and cloudy.
28	–	47	250	10	2¼ ebb	W	Strong breezes and cloudy.
29	–	46½	250	7	1¾ ebb	NW	Fresh breezes and squally.
30	–	46½	250	10	1¼ ebb	NW	do.
31	–	47	400	15	¾ ebb	W	Light breezes and light rain.

Carrickfergus Division.—Carrickfergus Station, Co. Antrim.

Taken by Richard Jenkins, Chief Officer, Second-class.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	° ′	° ′	Mile.	Fathoms.			(Taken at Noon.)
12	52 30	53	1¼	3¼	Ebb E	WSW	Moderate.
13	53	53 30	1⅛	3	do.	N W	Fine.
14	52	52	1½	3½	do.	SW	Moderate.
15	52	52 30	1	3	Flood W	W	Strong breeze.
16	51	50	1¼	3½	do.	SW	Rain.
17	51	49	1	3	do.	W	Squally.
19	49	46	1¼	3½	do.	NNW	Windy.
20	52	46	1½	3½	do.	SW	Moderate.
21	51 15	48	1¾	3¾	do.	W	Squally.
22	48	46	1½	3½	do.	W	Fine.
23	49 30	48	1	3	do.	W	Squally.
24	49 30	48	1	3	do.	W	Strong gale.
26	49	47 30	1¼	3	Ebb E	W	Fresh breeze.
27	49	46 15	1⅛	3⅛	do.	WSW	Strong breeze.
28	48	47	1½	3½	do.	SW	Rain
29	49	47	1¼	3	do.	WSW	Strong breeze.
30	48	48 30	1⅓	3½	do.	SW	do.
31	48	49	1¼	3	do.	WSW	Moderate.

Note.—Natural oyster beds exist in Belfast Lough, off Carrickfergus, about 1½ miles from the shore, and in or about 3 fathoms of water.

Ballycastle A Division.—Ballycastle Station, Co. Antrim.

Taken by George Williams, Chief Boatman, in charge.

Oct.				Feet.			
12	—	56	—	3½	½ flood S	S 4	Overcast and hazy; air warm.
13	—	56	—	3½	¼ flood S	NW 4	Clear and fine; air warm.
14	—	55 30	—	3½	¾ flood S	SSW 4	Overcast; do.
15	—	55	—	4	High water	NW 6	Overcast and showery; air cold.
16	—	54 20	—	3½	¼ flood S	NW 6	Cloudy and showery; air cold.
17	—	54 15	—	3½	¾ ebb N	WSW 5	Blue sky and clear; air cold.
19	—	54	—	3½	½ ebb N	NNE 7	do. do.
20	—	54	—	3½	¼ ebb N	SW by S 4	Overcast and hazy; do.
21	—	54	—	4	1 hour ebb N	WNW 5	Clear and fine; do.
22	—	54 15	—	4	High water	SSW 4	Cloudy and fine; air warm.
23	—	54	—	3½	5 hrs. fld. S	W 5	Overcast; air cold.
24	—	53 15	—	do.	¾ flood S	SW by S 7	Overcast, with rain; temperate.
26	—	53	—	do.	¼ flood S	W 5	Cloudy and showery; air cold.
27	—	53	—	do.	½ flood S	W 6	do. do.
28	—	51	—	do.	¼ flood S	SW 6	do. do.
29	—	51	—	do.	1 hr. flood S	NNW 7	Cold and showery; do.
30	—	53	—	do.	½ hour ebb	W 6	Cloudy and hazy; do.
31	—	53 15	—	do.	Low water	WSW 6	Cloudy and fine; air warm.

Rathmullen Division.—Sheephaven Station, Co. Donegal.

Taken by William Boyd, Comd. Boatman.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°		Feet.			
12	–	53	—	3	½ flood	SW	No oyster beds.
13	–	52	—	4	¼ flood	N	
14	–	52	—	3	¼ ebb	W	
15	–	52	—	2	½ ebb	W	
16	–	52	—	2	Low water	SW	
17	–	52	—	3	Ebb	N E	Observations commenced at
19	–	52	—	2	do.	S	noon from this date.
20	–	51	—	3	do.	W	
21	–	51	—	3	do.	NW	
22	–	51	—	4	do.	SW	
23	–	50	—	4	do.	WSW	
24	–	50	—	2	High water	W	
26	–	50	—	3	Flood	WNW	
27	–	49	—	2	do.	W	
28	–	48	—	2	do.	W	Gale; hail showers.
29	–	46	—	2	do.	NW	do.
30	–	48	—	2	do.	NW	
31	–	50	—	2	Low water	SW	

Carn Division.—Watch Vessel moored off Moville Station, Co. Donegal.

Taken by James Blygh, Chief Boatman, in charge of Victoria Watch Vessel.

1868.	Temperature. B. Near the Shore.			Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations. 1 foot below surface.
Oct.	°	°	°	Yards.	Fathoms.			
12	49	50	–	500	3½, 4	FT, ET,	W by S W, N W	50, 49
13	50	48½	50	do.	2, 2¾, 4½	E T, E T, H W	N W, N W, N W	49, 50, 49½
14	50	48	50	do.	4, 3, 3½	E T, F T, F T	S W, S W, S W by W	50, 50, 49½
15	49	48	49	do.	3½, 3, 4¼	E T, F T, F T	W by N W, N W, N W by W	50, 49, 49
16	48½	48	48	do.	4, 3¼, 4½	E T, E T, F T	W by S W, N W, W	48, 48, 48
17	47½	45½	46	do.	4, 2½, 5¾	E T, E T, F T	W N W, W N W, W N by W	48, 46, 46
19	46	46	44	do.	4, 3½, 3½	F T, E T, F T	N W by N, N N W	46, 46, 43½
20	44½	43½	42½	do.	4, 4, 4	F T, E T, F T	S, S W, S S W	43½, 44, 42
21	43½	45	43½	do.	4, 3½, 3	F T, E T, L W	W, W, W N W	43, 44½, 42½
22	42	44½	44	do.	3, 4, 3¼	F T, E T, E T	W, W, S S W	41, 45, 43½
23	43½	44	44	do.	2¾, 3¾, 3	F T, E T, E T	W, N W, W, W	43, 44, 43½
24	42	44	45	do.	3, 4, 3½	F T, F T, E T	S, S W, W N W, N N W	42, 44, 43½
26	44	42½	48½	do.	3, 3, 4	E T, F T, H W	W N W, W N W, W N W	43½, 42, 49
27	38½	42½	44	do.	3½, 3¼, 4	E T, F T, F T	N W by W, N W, N W	38, 42½, 44
28	43	42	43½	do.	3½, 3¼, 4	E T, F T, F T	W N W, S W, S W	43, 42½, 44
29	43½	42½	43	do.	3½, 3, 3½	E T, F T, F T	N W, N W, N W	43½, 43, 43
30	43	42½	43½	do.	3¾, 3½, 4	E T, S W, F T	W N W, W N W, W N W	43, 43, 44
31	44	42½	43	do.	3¾, 3, 3½	E T, E T, F T	W, W S W, W	44, 42½, 43

Carn Division.—Moville Station, Co. Donegal.

Taken by James Blygh, Chief Boatman, in charge of Victoria Watch Vessel, moored off Moville.

1868.	Temperature. A. At Sea. 1 foot from bottom. 7 A.M.	Noon.	5 P.M.	B. Near the Shore. 1 foot from surface. 7 A.M.	Noon.	5 P.M.	Distance from Land.	Depth of Water.			State of Tide, &c.			Wind.	
Oct.	°	°	°	°	°	°	Yards.	Fths.	Fths.	Fths.					
12	49	50	–	50	49	–	50	3½	4	–	F	E	–	W S	W NW
13	50	48½	50	49	50	49⅓	do.	3	2¾	4½	E	E	High	N W	N W
14	50	48	50	50	50	49½	do.	4	3	3½	E	F	F	S W	S W
15	49	48	49	50	49	49	do.	3½	3	4½	E	F	F	W to N	W N W
16	48⅓	48	48	48	48	48	do.	4	3¼	4½	E	E	F	W to S	W N W
17	47½	45½	46	48	46	46	do.	4	2½	3¾	E	E	F	W N W	W N W
19	46	46	44	46	46	43½	do.	4	3½	3½	F	E	F	W N W	N N W
20	44⅓	43⅓	42⅓	43½	44	42	do.	4	4	4	F	E	F	S S W	S S W
21	43⅓	45	43⅓	43	44½	42½	do.	4	3½	3	F	E	L W	W N W	W N W
22	42	44½	44	41	45	43	do.	3	4	3½	F	E	E	N W	S S W
23	43½	44	44	43	44	43½	do.	2¾	3¼	3	F	E	E	W N W	N W
24	42	44	45	42	44	43½	do.	3	4	3½	F	F	E	S S W	N N W
26	44	42½	48½	43½	42	49	do.	3	3	4	E	F	H W	W N W	W N W
27	38⅓	42⅓	44	38	42½	44	do.	3½	3¼	4	E	F	F	N W	N W
28	43	42	43½	43	42½	44	do.	3½	3¼	4	E	F	F	W N W	S W
29	43¼	42⅓	43	43⅓	43	43	do.	3½	3	3½	E	F	F	N W	N W
30	43	42½	43½	43	43	44	do.	3¼	3½	4	E	L W	F	N N W	W N W
31	44	42½	43	44	42½	43	do.	3¾	3	3½	E	E	F	W	W S W

Standing Order.

311/10. Royal Commission, Irish Fisheries,
10th October, 1868.

No specified time being given to take the temperature of the water in the order of 10th October, I instructed the Commissioned Boatman to take the temperature at 7 A.M., noon, and 5 P.M., also to take the temperature of the atmosphere, which he continued to take throughout the month. There are oysters in the neighbourhood of the Watch Vessel; it was an old dredging ground but is now very foul. The men who have dredged brought up very few oysters, some six or seven young ones; many old and large oyster shells have been brought up. Sea urchins plentiful, many brought up in the dredge and scollops, specimens of which I have kept.

James D. Curtis, Inspecting Commander, Carn Division.

Rutland Division.—Rutland Station, Co. Donegal.

Taken by Edward Codrington Ball, D.O., and Michael M'Carthy, Chief Boatman.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.		°		Feet.			
12	–	54	Near Innisloo	10	Low water	S	
13	–	52	Island.	12	¼ ebb	NW	
14	–	52	do.	6	½ ebb	SSW	
15	–	52	do.	8	High water	NW	
16	–	51	do.	10	½ ebb	WNW	
17	–	51	do.	12	¾ ebb	NW	
18	–	50	do.	8	½ ebb	WNW	
19	–	50	do.	10	¾ ebb	N E	
20	–	50	do.	7	½ ebb	N	
21	–	49	do.	8	do.	NW	
22	–	48	do.	10	¼ ebb	N	
23	–	48	do.	11	½ ebb	NW	
24	–	48	do.	14	High water	W	
25	–	48	do.	12	¾ flood	NW	
26	–	48	do.	12	do.	NW	
27	–	49	do.	11	do.	NW	
28	–	48	do.	10	½ flood	SW	
29	–	49	do.	7	¼ flood	NW	
30	–	50	do.	6	Low water	W	
31	–	50	do.	6	do.	SW	

Belmullet Division.—Ballyglass Station, Co. Mayo.

Taken by James Morgan, Chief Boatman, in charge.

Oct.	°	°		Fathoms.			
12	55	53	1 mile; ¼ mile	12 and 1½	Low; ½ flood W	SW	Fresh breeze and cloudy.
13	55	53	¼ mile; do.	6 „ 2	1st qr. flood; ½ flood, W	SW	Light breezes and cloudy.
14	55	53	do.	4 „ 3	Low; high	SSW	Fresh breezes and cloudy.
15	55	53	do.	6 „ 1¾	Last qr. flood; ½ flood, W	WNW	Strong winds and squally; showers of hail.
16	55	53	do.	6 „ 1¼	do. do.	WNW	Do. do.
17	52	48	do.	4 „ 1	Low; qr. fld.	NW	Do. do.
19	54 At noon	49	do. do.	6¾ „ 1	½ ebb; last qr. ebb, E	N	Strong winds and squally; passing showers of hail; heavy sea on coast.
20	52	52	do.	6 „ 1¾	½ ebb; ½ ebb, E	S E	Strong winds and squally; at noon fell to light airs and drizzling mist.
21	53	50	do.	5 „ 1¼	do. do.	NW	Strong winds and squally; passing showers of hail.
22	52	50	do.	7 „ 1½	¼ ebb; ¼ ebb, E	SW	Fresh breezes and cloudy.
23	52	50	do.	6 „ 1½	1st qr. ebb; 1st qr. ebb, E	W	Strong winds and squally.
24	–	–	do.	—	—	W	Impracticable to go afloat. A whole gale and squally, with rain.

Belmullet Division, &c.—*continued.*

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct. —*con.*	°	°		Fathoms.			
26	51	48	¼ mile	7 and 1½	Last qr. flood; last qr. fld. W	NW	Strong winds and squally, with showers of hail.
27	52	48	do.	6 „ 1¼	½ flood; ½ flood, W	NW	Moderate breezes and cloudy.
28	–	–	do.	—	—	SW	Impracticable to go afloat. Strong gales and squally, with rain.
29	49	48	do.	6 „ 1½	1st qr. flood; 1st qr. flood	WNW	Strong winds and squally.
30	50	50	do.	5 „ 1	do. do.	W by N	Strong winds and squally, with drizzling rain.
31	52	51	do.	6 „ 1	do. do.	SW	Do. do.

Note.—Could not get outside of Cashel Point lighthouse, Broadhaven, in consequence of the boisterous weather and heavy sea. The temperature at sea was taken inside of Broadhaven, from 12 fathoms to 5 fathoms.

Westport Division.—Pigeon Point Station, Co. Mayo.

Taken by William John, Chief Boatman, in charge.

Oct.	°	°		Fathoms.			
12	–	53	¼ mile	2	½ flood SE	WSW	Fresh.
13	–	53	do.	2	¼ flood S E	W	Fine.
14	–	52	do.	2	do.	S	Moderate.
15	–	53	200 yards	1	1 hr. flood SE	WNW	Strong.
16	–	52	½ mile	2	½ flood S E	N W	Stormy.
17	–	51	¼ mile	1	do.	N W	Fresh.
19	–	49	½ mile	1½	1 hr. ebb NW	N W	Moderate.
20	–	49	¼ mile	1½	2½ do. N W	S	Moderate, with rain.
21	–	48	½ mile	1	4 hrs. ebb N W	N NW	Fresh and squally.
22	–	49	do.	2	3 hrs. ebb N W	WSW	Moderate.
23	–	48	¼ mile	2½	2 hrs. ebb N W	W	Stormy.
24	–	49	100 yards	1	1½ hours ebb NW	W	do.
26	–	49	½ mile	2	1½ flood S E	N W	do.
27	–	48	¼ mile	1½	2½ flood S E	N W	Fresh and squally.
28	–	47	½ mile	2½	3 hours flood S E	WSW	Stormy.
29	–	48	300 yards	1½	3½ last quarter S E	N W	do.
30	–	48	½ mile	2	2½ last quarter S E	WNW	do.
31	–	52	do.	1¼	1 hour last quarter S E	W	Moderate.

Westport Division.—Innislyre Station, Co. Mayo.

Taken by Charles Thomas, Chief Boatman, in charge.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°		Fathoms.			
12	–	54	½ mile	3½	H. water, S E	SW	Moderate breeze with rain.
13	–	53	600 yards	3	½ flood S E	W to N W	Moderate breeze and cloudy
14	–	55	do.	3½	¼ flood S E	SW	do.
15	–	54	do.	do.	Low water	N W	Strong gales with rain.
16	–	53	do.	do.	do.	N W	Fresh gales with rain.
17	–	51½	do.	2½	do.	N W	Strong breeze with hail showers.
19	–	51	300 yards.	1½	5 hours ebb to the N W	N W	Light breezes and cloudy.
20	–	50	do.	2½	¾ ebb N W	N W	Strong breeze with hail showers.
21	–	50	500 yards	2½	¾ ebb N W	N N W	Strong breeze with rain.
22	–	51	300 yards.	3	½ ebb	S W	Moderate breezes with rain
23	–	48	do.	3	2 hours ebb	W N W	Strong gales with hail.
24	–	50	50 yards	1½	¼ ebb N W	W S W	Strong gales and cloudy.
26	–	50	300 yards	3½	½ flood S E	W N W	Strong gales with rain.
27	–	50	600 yards	3½	2 hrs. flood S E	N W	Fresh breeze with rain.
28	–	50	300 yards	3½	¼ flood	S W	Strong gales with rain.
29	–	49	200 yards	3	2 hrs. flood S E	N W	do.
30	–	50	500 yards	4	1½ hrs. flood	W S W	Strong breezes with rain.
31	–	50	800 yards	4	1 hour flood	S W	do.

Westport Division.—Innisgowla Station, Co. Mayo.

Taken by William Bubb, Chief Boatman, in charge.

Oct.							
26	49	49	½ and 1 mile	3½ & 9 faths.	½ S E	N W	Temperature taken each day on different oyster ground. Depth of water on oyster beds from one to five fathoms.
27	48	48	¾ and 1 mile	4 & 10 faths.	¾ E	N W	
28	47	47	¾ mile	3½ & 8 faths.	¼ E S E	S W	
29	47	46	½ and 1 mile	4 & 11 faths.	¼ S E	N W	
30	47	47	1½ and 2 miles	5 & 10 faths.	¾ S E	W	
31	48	48	½ and 2 miles	3 & 16 faths.	½ E	W S W	

The first Thermometer received was found broken. Second Thermometer received on 26th instant.

Galway Division.—Ballyvaughan Station, Co. Clare.

Taken by George Bond, Chief Officer.

Oct.	° ′	° ′					
12	55	55	1 mile; ¼ mile	8 fathoms; 10 feet	Ebb; do.	W S W	2 15 p.m. at sea; 3 30 p.m. on oyster bank.
13	55	53 45″	1½ mile; 40 yds.	4 feet; 4 fath.	Flowing S.	W S W N E	9 35 a.m. on oyster bed
14	55 45	55	2 miles; 150 yards	9½ fathoms; 2 fathoms	Flowing E. do. Flowing S.	Calm S S W S W	10 30 a.m. at sea. 11 40 a.m. at sea; 3 5 p.m. on oyster bank at New Quay.

GALWAY DIVISION, &c.—*continued.*

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct. —*con.*	° ′	° ′					
15	–	54 50	30 yards	8 feet	High water	WNW	4 30 p.m. near shore at Ballyvaughan.
16	–	54 30	500 yards	11 feet	Flowing S.	NW	3 10 p.m. on oyster bank, Ballyvaughan.
17	52 30	52	1½ miles; 400 yards	9½ fathoms; 4 feet	Ebb; flowing S	WNW; WNW	10 15 a.m. at sea; at noon on oyster bank at Ballyvaughan.
19	–	49	500 yards	do.	Ebb	NW	At noon on oyster bank.
20	–	50	6 yards	3 feet	do.	S	Noon, edge of bank at Muckniss.
21	–	50	400 yards	6 feet	do.	NW	Noon, on oyster bank at Ballyvaughan.
22		51	500 yards	7 feet	do.	SSW	do.
23	–	50	600 yards	8 feet	do.	NW	do.
24	–	51	10 yards	4 feet	do.	WSW	Noon, near shore, Ballyvaughan.
26	–	50 45	20 yards	6 feet	Flowing S	W	do.
27	–	50	500 yards	7 feet	do.	WNW	Noon, on oyster bed, Ballyvaughan.
28	–	49 15	6 yards	3 feet	do.	SW	Noon, edge of oyster bed, Muckniss.
29	–	50	200 yards	8 feet	do.	WSW	Noon, on oyster bank, Ballyvaughan.
30	–	50 45	8 yards	4 feet	do.	W	Noon, near shore, Ballyvaughan.
31	–	52	7 yards	3 feet	do.	WSW	do.

GALWAY DIVISION.—KINVARRA STATION, CO. GALWAY.

Taken by GEORGE BOND, Chief Officer.

Oct.							
12	–	–	—	—	—	–	Not receiving the order till 2 p.m., no observations taken.
13	54 45	54	1½ miles; 30 yds	4½ faths.; 8 ft.	Flowing E; flowing S.	Calm; ENE	11 5 a.m. at sea; near the shore at Kinvarra.
14	55	54 50	250 yds.; 1 mile	3 faths.; 4½ fathoms	Flowing SE; flowing E	SSW; SSW	1 30 p.m. on oyster bank at Dorria; 2 p.m. at sea.
15	–	52 50	10 yards	7 feet	Flowing SE	W	4 p.m. near shore, Kinvarra.
16	–	52 45	7 yards	6 feet	Ebb	W	7 a.m. do.
17	51	51	1 mile; 300 yds.	3 faths.; 5 feet	Flowing E; flowing SE	WNW; WNW	2 5 p.m. at sea; 4 p.m. on oyster banks at Tyrone.
19	–	50	100 yards	4 feet	Ebb	NW	Noon, on oyster bank.
20	–	50 30	4 yards	3 feet	do.	S	do.
21	–	49 45	12 yards	do.	do.	NW	Noon, near oyster bed.
22	50	–	2½ miles	7 fathoms	do.	SW	Noon, at sea.
23	–	49	250 yards	6 feet	do.	NW	Noon, on oyster bed, Pauldoog.
24	–	52	6 yards	4 feet	do.	WSW	Noon, near shore, Kinvarra.
26	–	48 30	20 yards	7 feet	Flowing S	W	Noon, on edge of oyster bank, Kinvarra.
27	–	48 50	400 yards	do.	do.	NW	Noon, on oyster bed.
28	–	50 30	300 yards	9 feet	Flowing SE	SW	Noon, on oyster bed, Doorus.
29	–	47 50	10 yards	3 feet	Flowing S	WSW	Noon, near shore, Kinvarra.
30	–	48 30	8 yards	do.	do.	W	Noon, near shore, Cunneen.
31	–	52	7 yards	4 feet	do.	WSW	Noon, near shore, Kinvarra.

Clifden Division.—Roundstone Station, Co. Galway.

Taken by Charles M'Donald, Chief Officer, Second-class.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	° ′	° ′					
19	54	–	4 miles	10 fathoms	Low water	N W	
20	–	52 30	500 yards	2 fathoms	Ebb S W	N W	Taken on the oyster banks
21	54	–	3 miles	7 fathoms	do.	N N W	at Innisknee.
22	–	52 30	300 yards	10 feet	do.	S W	do.
23	53 30	–	2½ miles	6 fathoms	do.	S W	
24	–	51 30	300 yards	10 feet	do.	W	Oyster bank at Cashel.
26	52 30	–	2 miles	4½ fathoms	Flood N E	W	
27	–	50 30	500 yards	4 fathoms	do.	W N W	Oyster bank at Innisknee.
28	52 30	–	3 miles	11 fathoms	do.	S S W	
29	–	50	400 yards	3 fathoms	do.	N N W	Oyster bank at Cashel.
30	52 30	–	4 miles	9 fathoms	do.	W S W	
31	–	50	20 yards	9 feet	do.	W S W	Oyster bank at Innisknee. Sea fresher than usual at present on both oyster banks, caused by the heavy rains during the month.

Note.—Forms and Thermometer received at Station October 17.

Ballyheige Division.—Ballyheige Station, Co. Kerry.

Taken by Chief Boatman of Station.

Oct.	°	°					
13	–	55	Off the rocks.	1 foot	¼ flood	NW	Heavy sea.
14	–	49½	do.	2 feet	¾ flood	W	Coast impracticable.
15	–	50	do.	3 feet	¼ flood	W	Heavy ground swell.
16	–	49	do.	4 feet	High water	NW	Heavy sea.
17	–	52	do.	5 feet	½ flood	NW	Heavy ground swell.
19	–	54	do.	1 foot 6 in.	Low water	N	Calm sea.
20	–	51	do.	2 feet	⅝ ebb	NW	Ground swell.
21	–	51½	do.	1 foot	⅓ ebb	NW	Heavy sea.
22	–	51¼	do.	3 feet	½ ebb	SW	do.
23	–	51	do.	1 foot 6 in.	High water	SW	do.
24	–	51	do.	2 feet	⅝ flood	WSW	do.
26	–	49	do.	1 foot	High water	NW	Heavy surf.
27	–	51½	do.	do.	¾ flood	NW	Heavy ground swell.
28	–	50	do.	2 feet	⅓ flood	SW	Heavy sea.
29	–	49	do.	1 foot	¼ flood	NW	do.
30	–	52	do.	2 feet	do.	NW	do.
31	–	53	do.	1 foot	Low water	W	do.

Pullendiva Division.—Pullendiva Station, Co. Mayo.

Taken by Mr. George Horwood, I.O., and W. S. Yeo, Chief Boatman.

1868.	Temperature. A. At Sea.	Temperature. B. Near the Shore.	Distance from Land.	Depth of Water.	State of Tide, &c.	Wind.	Observations.
Oct.	°	°					
12	–	53	—	—	4½ hrs. flood E	SW	Taken at 10 50 a.m.
13	–	53	—	—	5 flood E	WNW	,, 1 24 p.m.
14	–	53	—	—	do.	SSW	,, 2 10 p.m.
15	–	53	—	—	4 flood E	WSW	,, 2 0 p.m.
16	–	51	—	—	3 flood E	W	,, 1 40 p.m.
17	–	48	—	—	2 flood E	W	,, 1 50 p.m.
19	–	52	—	—	5 ebb NW	NW	Taken at noon.
20	–	51	—	—	4 ebb NW	S	do.
21	–	50	—	—	3½ ebb NW	WSW	do.
22	–	50	—	—	3 ebb NW	SW	do.
23	–	50	—	—	2 ebb NW	SW	do.
24	–	–	—	—	—	–	A heavy sea on the coast made it impracticable to test the temperature this day.
26	–	50	—	—	4½ flood E	–	Taken at noon.
27	–	50	—	—	3½ flood E	–	do.
28	–	50	—	—	2¾ flood E	–	do.
29	–	47	—	—	2 flood E	–	do.
30	–	50	—	—	1¼ flood E	–	do.
31	–	54	—	—	¾ flood E	–	do.

Kenmare Division.—Lackeen Point Station, Co. Kerry.

Taken by Lieut. Boileau (Divisional Officer).

Oct.	°	°					
24	–	56	Alongside rocks	8 feet	Ebb tide to W	Gale from WSW	Water quite fresh from heavy rain. Boat could not stand sea
26	54	54	1 mile	12 fathoms	Flood tide to E	N W 4	
27	53	49	do.	do.	do.	N W 4	Too rough for boat. Water
28	–	49	Alongside rocks	8 feet	do.	WSW 6	nearly fresh from heavy
29	52	50	1½ miles	12 fathoms	do.	N W 5	rains.
30	56	51	1 mile	do.	do.	W 4	The few oysters here are of
31	56	50	do.	do.	do.	W 4	a fine description of rock oysters.

The thermometer which arrived here on the 12th was broken in coming through the post-office, and was returned to coast-guard office.

Second thermometer came also broken and was returned to office.

Third thermometer came on 23rd in good condition.

P.S.—I never saw finer oysters produced than there are in this bay. It is a pity more seed is not brought here. The seed from Tralee laid last year on the Sneem oyster bed, about the size of half-a-crown, are now large—in perfect order—price *7s. 6d.* per 120.

APPENDIX F.

List of Licences Granted to plant Oyster Beds up to 31st December, 1869.

No.	Date of Licence.	Person to whom granted.	Locality of Beds.	Area of Beds. A.	R.	P.
	1846.					
1	5th November,	W. H. Carter, esq., .	Tramore Bay, county Mayo, .	19	1	11
2	7th December,	Luke Lyons, esq., .	Monroughrony, county Mayo, .	17	0	0
	1848.					
3	9th June, .	F. H. Downing, .	Off Daurus Point, county Kerry,	3	2	28
	1849.					
4	24th February,	R. T. Evanson, .	Dunmanus Bay, county Cork,	19	0	10
	1851.					
5	5th February,	John Mahony, esq., .	Estuary of Kenmare River, county Kerry.	165	2	0
6	5th February,	Rev. Denis Mahony, .	Estuary of Kenmare River, county Kerry.	147	2	0
	1852.					
7	17th November,	Thomas White, esq., .	Ballisodare Bay, county Sligo,	132	1	26
8	17th November,	John C. Garvey, esq.,	Clew Bay, county Mayo, .	108	3	33
	1853.					
9	22nd September,	J. O. Woodhouse, esq.,	Mulroy Bay, county Donegal,	63	0	26
	1854.					
10	1st July, .	Burton Bindon, esq.,	Carlingford Lough, co. Louth,	51	3	10
11	15th November,	Hon. David Plunkett,	Killary Harbour, county Mayo,	288	0	0
12	15th November,	J. K. Boswell, esq., .	Ballyconnelly Bay, co. Galway,	233	0	0
	1855.					
13	18th July, .	John Richards, esq., .	Blacksod Bay, county Mayo, .	90	0	0
	1856.					
14	30th July, .	Lord Chas. P. P. Clinton,	Bear Haven, county Cork.	45	0	0
15	21st August, .	Wm. Foreman, esq.,	Ardbear Bay, county Galway,	90	2	0
	1857.					
16	7th August, .	Thomas Eccles, esq.,	Glengariffe Harbour, co. Cork.	9	1	0
	1858.					
17	15th February,	Rev. A. Magee, .	Streamstown and Cleggan Bays, county Galway.	277	0	0
18	15th February,	A. C. Lambert, esq.,	Killary Harbour, co. Galway, .	114	0	0
	1860.					
19	3rd February,	Rev. R. H. Wall, .	Mannin and Ardbear Bays, co. Galway.	348	0	0
20	3rd February,	Knight of Kerry, .	Valencia Harbour, co. Kerry, .	78	0	0
21	3rd February,	Captain W. Houston,	Killary Harbour, county Mayo,	43	0	0
22	13th February,	Wm. M'Cormick, esq.,	Achill Sound, county Mayo, .	149	0	0
23	11th May, .	Edward Browne, esq.,	Ballinakill Harbour, co. Galway,	223	0	0
24	4th October, .	M. C. Cramer, esq., .	Oyster Haven, county Cork, .	20	0	0
25	9th October, .	Ebenezer Pike, esq., .	Lough Mahon, Estuary of Lee, county Cork.	47	0	0
26	14th November,	William Pike, esq., .	Achill Sound, county Mayo, .	1,676	0	0

List of Licences Granted to plant Oyster Beds up to 31st December, 1869—*continued.*

No.	Date of Licence.	Person to whom granted.	Locality of Beds.	Area of Beds. A.	R.	P.
	1861.					
27	10th January, .	William Forbes, esq.,	Meenwish Bay, county Galway,	225	0	0
	1862.					
28	14th February,	Robt. W. C. Reeves, esq.,	Clonderlaw Bay, county Clare,	112	0	0
29	3rd March, .	James Walker, esq., .	Belfast Lough, Carrickfergus, .	137	0	0
30	6th March, .	Edmund Power, esq.,	Tramore Bay, co. Waterford, .	270	0	0
	1863.					
31	29th May, .	Geo. Clive, esq., M.P.,	Achill Sound, county Mayo, .	489	0	0
	1864.					
32	2nd February,	Lord Fortescue, .	Tramore Bay, co. Waterford, .	83	0	0
33	5th April, .	Lord Wallscourt, .	Galway Bay, county Galway, .	1,770	0	0
34	10th June, .	Col. C. M. Vandeleur, M.P.	Poulnasherry Bay, county Clare,	190	0	0
35	10th June, .	A. W. Wyndham, esq.,	Newport Bay, county Mayo, .	80	0	0
36	30th September,	Capt. George Austin,	Westport Bay, county Mayo, .	194	0	0
37	31st October, .	John Kendall, esq., .	Ardbear and Mannin Bays, county Galway.	236	0	0
38	31st October, .	Robt. T. Atkins, esq.,	Lough Hyne, county Cork, .	25	0	0
39	31st October, .	R. E. L. Athy, esq.,	Galway Bay, county Galway, .	100	0	0
40	31st October, .	P. M. Lynch, esq., .	Galway Bay, county Galway, .	320	0	0
41	11th November,	A. Boate, esq., . .	Dungarvan Harbour, county Waterford.	65	0	0
42	11th November,	J. R. Dower, esq., .	Dungarvan Harbour, county Waterford.	27	0	0
43	31st December,	Captain W. F. Barry,	Glandore Harbour, co. Cork, .	68	0	0
44	31st December,	C. P. Archer, esq., .	Ballinakill Harbour, county Galway.	48	0	0
45	31st December,	T. Young Prior, esq.,	Ballinakill Harbour, county Galway.	90	0	0
46	31st December,	P. Macauley, esq., .	Ballinakill and Barnaderg Bays, county Galway.	150	0	0
47	31st December,	Col. F. A. K. Gore,	Killala Bay, county Mayo, .	375	0	0
	1865.					
48	13th April, .	Marquess of Sligo, .	Clew Bay, county Mayo, .	190	0	0
49	13th April, .	Sir Robt. Gore Booth,	Drumcliffe Bay, county Sligo,	148	3	0
50	29th April, .	Rt. Hon. John Wynne,	Sligo Bay, county Sligo, .	190	0	0
51	12th May, .	Lord Baron Ventry, .	Dingle Harbour, co. Kerry, .	130	0	0
52	2nd November,	Law Life Assurance Society.	Clew Bay, county Mayo, .	118	0	0
53	2nd November,	Marquess of Sligo, .	Clew Bay, county Mayo, .	25	0	0
54	1st December,	Most Rev. Dr. M'Hale,	Shores of Achill Island, county Mayo.	125	0	0
55	1st December,	Thos. M'Carthy Collins, esq.	Roaringwater Bay, co. Cork, .	75	0	0
56	1st December,	Marquess of Sligo, .	Clew Bay, county Mayo, .	26	0	0
57	1st December,	John Obins Woodhouse, esq.	Carlingford Lough, co. Louth,	54	0	0
58	1st December,	Captain Acheson, .	Ballinakill Harbour, county Galway.	18	0	0
59	1st December,	Rich. J. Verschoyle, esq.	Ballisodare Bay, county Sligo,	54	0	0
60	1st December,	Richard Mahony, esq.,	Kenmare Estuary, co. Kerry, .	30	0	0
61	1st December,	Mr. Robert M'Keown,	Killary Harbour, . . .	61	0	0
	1866.					
62	20th April, .	William Dargan, esq.,	Wexford Harbour, . . .	70	0	0
63	20th April, .	Marquess of Sligo, .	Clew Bay, county Mayo, .	270	0	0
64	21st April, .	Miss Anne Fowler, .	Blacksod Bay, county Mayo, .	11	0	0
65	4th June, .	John Obins Woodhouse, esq.	Carlingford Lough, co. Louth,	42	0	0

List of Licences Granted to plant Oyster Beds up to 31st December, 1869—*continued.*

No.	Date of Licence.	Person to whom granted.	Locality of Beds.	Area of Beds. A.	R.	P.
	1867.					
66	15th June, .	Sir Rbt. Gore Booth, bt.	Drumcliffe Bay, county Sligo,	87	0	0
67	10th July, .	Horatio Hamilton Townsend, esq.,	Skull Harbour, county Cork, .	230	0	0
68	10th July, .	Thomas Sandes, esq.,	River Shannon, county Kerry,	780	0	0
69	10th July, .	Mrs. Elizab. Atkinson.	Blacksod Bay, county Mayo, .	100	0	0
70	10th July, .	M. J. C. Longfield, esq.	Roaringwater Bay, co. Cork, .	310	0	0
71	10th July, .	Thos. Kirkwood, esq.,	Saleen Harbour, co. Mayo, .	17	0	0
72	10th July, .	Richd. D. Kane, esq.,	Howth Strand, county Dublin,	36	0	0
73	10th July, .	Wm. & J. St. George, esqrs.	Galway Bay, county Galway, .	810	0	0
74	10th July, .	Chris. T. Redington, esq.	Galway Bay, county Galway, .	650	0	0
75	10th July, .	Mrs. Elizabeth Bury,	Lough Mahon, county Cork, .	70	0	0
76	10th July, .	Rev. Nicholas Martin,	Trawbreaga Bay, co. Donegal,	90	0	0
77	15th July, .	John Smyth, esq., .	Midleton River, county Cork, .	10	2	0
78	15th July, .	Stephen E. Collis, esq.	River Shannon, county Kerry,	212	0	0
79	15th July, .	Thomas Hicks, esq., .	Roaringwater Bay, co. Cork, .	45	0	0
80	16th July, .	Rt. W. C. Reeves, esq.,	River Shannon, county Clare,	30	0	0
81	24th July, .	Fras. J. Graham, esq.,	Barnaderg Bay, county Galway,	90	0	0
	1868.					
82	31st January, .	William Hart, esq., .	Lough Swilly, county Donegal,	790	0	0
83	11th February,	Richard Lyons, esq.,	Midleton River, county Cork, .	15	0	0
84	11th February,	Charles Sandes, esq.,	River Shannon, county Kerry,	56	0	0
85	13th March, .	Stephen Browne, esq.,	Dunmanus Bay, county Cork, .	9	0	0
86	13th March, .	Col. Edward Cooper,	Ballysodare Bay, county Sligo,	190	0	0
	1869.					
87	13th February,	Henry Herbert, .	Kenmare Bay, . . .	20	0	0
88	13th February,	Earl of Bantry, .	Adrigole Harbour, . . .	18	0	0
89	13th February,	Earl of Bantry, .	Glengariffe Harbour, . .	60	0	0
90	4th March, .	John P. Nolan, .	Ard Bay, ...	290	0	0
91	11th March, .	Richard J. Mahony, .	Kenmare Bay, . . .	46	0	0
92	11th March, .	Thomas K. Sullivan,	Kenmare Bay, . . .	195	0	0
93	15th March, .	John W. Payne, .	Bantry Bay, ...	51	0	0
94	14th June, .	John W. Stratford, .	Killala Bay, ...	31	0	0
95	14th June, .	Mrs. Cath. Brown, .	Courtmacsherry Bay, . .	60	0	0
96	14th June, .	William Little, .	Killala Bay, ...	190	0	0
97	10th September,	Lord Clermont, .	Carlingford Lough, . .	46	0	0
98	10th September,	Henry W. Meredith,	Sligo Bay, ...	20	0	0
99	10th September,	Owen Wynne, . .	Sligo Bay, ...	77	0	0
100	10th September,	Owen Wynne, . .	Sligo Bay, ...	53	0	0
			Total, . . .	16,935	1	24

Note.—Licence No. 2 (Luke Lyons), merged into Licence No. 71, to Thomas Kirkwood. Licence No. 50 withdrawn, and a new Licence with altered boundaries issued to Owen Wynne, No. 99.

APPENDIX G.

DIGEST of the Acts of Parliament and the By-Laws at present in force in Ireland for the regulation of the Oyster Fisheries, to which is added an Abstract of the Law enabling certain persons to form or plant Bait Beds. Compiled by THOMAS F. BRADY, Inspector of Irish Fisheries.

The Legislation on the subject of the Oyster Fisheries of Ireland being scattered over so many Acts of Parliament (no less than ELEVEN in number), rendering it difficult, if not almost impossible, for any person not thoroughly conversant with them, to understand the actual laws in force regulating this branch of the Fisheries of the country, has induced me to extract the sections bearing on the subject, from the different Acts, and present them in the form of a Digest. The present work is therefore published for the guidance and information of all persons interested in the subject, and it is hoped may be found useful to owners of Oyster Beds, persons about to form or plant New Beds or Layings, and the public generally.

5 & 6 Vic., c. 106; 7 & 8 Vic., c. 108; 8 & 9 Vic., c. 108; 11 & 12 Vic., c. 92; 14 & 15 Vic., c. 92; 24 & 25 Vic., c. 96; 29 & 30 Vic., c. 88; 29 & 30 Vic., c. 97; 30 Vic., c. 18; and 32 & 33 Vic., c. 92.

1. Persons entitled to Licence to plant Oyster Beds above, or above and below low-watermark :— Who entitled to Licence to plant beds. 32 & 33 Vic., c. 92, s. 14.

a. The owner of any several fishery.
b. Any person with the consent of such owner.
c. The owner of the Soil and Bed of any estuary.
d. Any person with the consent of such owner.
e. The owner of any land bordering on the Sea, or any estuary.
f. Any person with the consent of such owner, but the Licence shall only continue to be in force for such period as shall be named in such consent.
g. The occupier of any land bordering on the Sea or any estuary; but such Licence shall only continue and be in force during the continuance in occupation of the person who was in occupation at the time of granting such Licence.
h. Any person with the consent of the occupier of the land bordering on the Sea, or any estuary; but such Licence shall only continue and be in force during the continuance in occupation of the person who was in occupation at the time of granting such Licence.

2. Persons entitled to plant Oyster Beds exclusively below low-watermark.

i. Any of the persons named before.

k. Any person whatever, with the Licence in writing of the Inspectors of Irish Fisheries, save that such Licence cannot be granted within a Several Fishery, or on the soil and bed of any estuary being the private property of some person other than the applicant, without the consent in writing of the owner thereof.

NOTE.—Forms of application for Licences can be obtained at the Office of the Inspectors of Irish Fisheries, Dublin. Every application must be accompanied with a six-inch Ordnance Sheet on which the proposed bed is clearly delineated and marked out.

LICENCES.

Inspectors may grant Licences. 32 & 33 Vic., c. 92, ss. 8, 14, and 20, and 29 & 30 Vic., c. 97, s. 4.

3. Inspectors of Irish Fisheries may grant Licences to form or plant Oyster Beds or Layings, whether above or below low-watermark.

Licences to be in writing, 29 & 30 Vic., c. 97, s. 5.

4. Licences to be in writing under the hands of any two of the Inspectors of Irish Fisheries, and to define by reference to map or otherwise the position and limits of Oyster Bed. Licences may be made subject to such conditions and limitations, and may be perpetual or terminable, as to the Inspectors shall seem proper.

Where public rights exist. 29 & 30 Vic., c. 97, s. 6.

5. No Licence can be granted in any place where the Inspectors shall be of opinion that the public exercise and enjoy *bona fide* a substantially profitable fishing for oysters, nor within the limits of any Oyster Bed or Oyster Fishery, the property of any private person.

Licences to be approved by Lord Lieut. 32 & 33 Vic., c. 92, s. 14.

6. Licences subject to the approval of the Lord Lieutenant.

Notice to be given previously to the granting of Licence. 29 & 30 Vic., c. 97 s. 6.

7. Previously to granting Licence, notice, stating application and the time and place (not sooner than three weeks from the date of such notice), when and where the Inspectors shall hold a public inquiry in the district, as to the expediency of granting Licence, to be inserted at least three times in some newspaper circulating in the district; and also to be posted at or near the nearest police station.

Notice to be given of granting Licence. 29 & 30 Vic. c. 97, s. 7.

8. After granting Licence, like notices to be given, and a true copy of every such Licence signed by the Secretary, to be lodged with the Clerk of the Peace of the County within which the Licence shall operate; and a copy certified under the hand of such Clerk of the Peace shall be admitted in evidence in the same manner as if the copy was the original Licence.

Persons dissatisfied may appeal. 29 & 30 Vic., c. 97, s. 8.

9. Any person feeling dissatisfied may appeal *within one month* after the granting of Licence by way of memorial to the Lord Lieutenant in Council, that Licence may be vacated; and notice of such appeal must be given to the Licencee and to the Inspectors. Lord Lieutenant in Council shall adjudicate thereon, and either confirm or vacate such Licence.

Effect of Licence. 29 & 30 Vic., c. 97, s. 9.

10. Licence, if unappealed from, or if confirmed on appeal, shall be binding and conclusive on all persons, including the Queen, and shall operate to vest in Licencee, and heirs, &c., such rights and privileges as shall be given thereby, free from all prior or other rights, titles, estates, or interests.

11. Production of copy of Licence certified under the hand of Clerk of Peace, to be evidence in all Courts that the Licence of which it purports to be a copy was duly granted, and that all matters and things required to be done previously to the granting of Licence had been duly done and performed.

Copy of Licence certified by Clerk of Peace to be evidence. 29 & 30 Vic., c. 97, s. 12.

12. Inspectors may alter any Licence *heretofore* granted, or grant a new Licence in lieu thereof, to Licencee or his representative, so as to give effect to any agreement or undertaking given or entered into by or on behalf of any such Licencee, with any person or body subsequently to the date of such Licence.

Power to alter Licences. 29 & 30 Vic., c. 97, s. 15.

13. Any Licence heretofore granted or hereafter to be granted, determinable by a certificate of the Inspectors, certifying that they are not satisfied that the Oyster Bed is properly cultivated; and on such certificate the Licence and all rights or privileges absolutely determined, and all provisions of Acts shall cease to operate in relation to such Licence as an Oyster Fishery.

Licence determinable on Certificate of Inspectors. 29 & 30 Vic., c. 97, s. 10; 32 & 33 Vic., c. 92, ss. 8 & 20.

14. Inspectors may from time to time make such inquiries and examinations with respect to such Oyster Fishery and require from Licencee such information as they may think necessary or proper. Licencee shall afford all facilities for such inquiries and examinations, and give such information accordingly.

Inspectors empowered to make inquiries and examinations.—*Ib*

15. If within three years from the date of Licence, proper steps have not been taken, in the opinion of the Inspectors, to form the Oyster Bed, Inspectors may by order in writing under the hands of any two of them revoke Licence, and thereupon all rights and privileges thereunder shall cease and determine.

Power to revoke Licences in certain cases. 29 & 30 Vic., c. 97, s. 14.

16. Previously to making such order, Inspectors shall serve notice of their intention upon the person for the time being entitled to the Licence, or in case he cannot be found, to cause such notice to be inserted three times at least in some newspaper circulating in the district. Order of revocation not to be made till after the expiration of one month from service of notice or from date of last advertisement, which shall last happen.

Notices to be served on Licencee previously to making Order of Revocation.—*Ib.*

Orders not to be made till one month after notice.

LICENCES GRANTED BEFORE PASSING OF ACT 29 & 30 VIC., C. 88, (1866).

17. Same provisions as to revoking Licences heretofore granted by the Commissioners of Public Works in Ireland.

29 & 30 Vic., c. 88, s. 3.

18. A copy of such Licences, certified by Inspectors or their Secretary, evidence of original Licence.

29 & 30 Vic., c. 88, s. 4.

19. And every such Licence deemed effectual to vest in such Licencee, his heirs and assigns, the exclusive right of laying and planting Oysters, and fishing for Oysters in the Oyster Bed authorized by such Licence, free from all prior or other rights, titles, estates, or interest whatsoever.

Effect of such Licences. 29 & 30 Vic., c. 88, s. 1.

Injuring Oyster Beds.

Penalties for injuring Oyster Beds. 29 & 30 Vic., c. 88, s. 2, and 29 & 30 Vic., c. 97, s. 13.

20. Any person other than the Licencees or their assigns, agents, servants, and workmen, within the limits of any Oyster Bed or Laying, knowingly doing any of the following things:—

Using any implement of fishing, except a Line and Hook or a Net adapted solely for catching floating fish, and so used as not to disturb or injure in any manner any Oyster Bed or Oysters, or the Oyster Fishery:

Dredging for any ballast or other substance except under a lawful authority for improving the navigation:

Depositing any (*stone*, 29 & 30 *Vic.*, *c.* 97,) ballast, rubbish, or other substance:

Placing any implement, apparatus, or thing (*in the opinion of the Inspectors*, 29 & 30 *Vic.*, *c.* 88,) prejudicial, or likely to be prejudicial, to any Oyster Bed or Oysters, or Brood or Spawn thereof, or to the Oyster Fishery, except for a lawful purpose of navigation or anchorage:

Disturbing or injuring in any manner, except as last aforesaid, any Oyster Bed or Oysters, or Brood or Spawn thereof, or the Oyster Fishery:

Interfering with or taking away any of the Oysters from such Bed without the consent of the Licencees or Owners or occupiers of such Bed:

Liable to a penalty not exceeding Two Pounds for first offence—not exceeding Five Pounds for second offence—and not exceeding Ten Pounds for Third and every subsequent offence; and also liable to make full compensation to the Licencees for all damage sustained by them by reason of unlawful act, and in default of payment, same may be recovered by the grantees (*Licencees*, 29 & 30 *Vic.*, *c.* 97,) by proceedings in any Court of competent Jurisdiction, whether offender has been prosecuted for or convicted of offence or not. (See also 42–46.)

Close Season.

Close Season. 5 & 6 Vic., c. 106, s. 32.

21. The general Close Season for Oysters is between 1st May and 1st September, and unlawful to dredge for, take, catch, or destroy (*or have in possession*, s. 36,) any Oysters or Oyster Brood between those dates, except where the season may have been or may be altered.

5 & 6 Vic., c. 106, s. 36, and 11 & 12 Vic., c. 92, s. 42.

Penalty, Forfeiture of Oysters, and any sum not exceeding Five Pounds, and not less than Ten Shillings.

Note.—This season has been altered in the following localities, viz.:—In Tralee Bay from 1st April to 1st November; in Carlingford Lough from 1st March to 1st November; in Achill Sound, Clew Bay, and Blacksod Bay, from 1st April to 1st October; but between 1st and 15th April and 20th June and 1st October Oysters may be taken in Clew Bay from the natural public bed, lying below level of lowest water of spring tides, for purpose of replenishing private Oyster Beds in Clew Bay alone.—(*See Appendix* A.)

Alteration of Close Season.

Inspectors may alter close season. 5 & 6 Vic., c. 106, s. 33.

22. Inspectors of Irish Fisheries empowered to alter close season. (*See Appendix* A.)

Notices and Meeting previous to alteration. 7 & 8 Vic., c. 108 s. 4.

23. Before alteration of Season, a meeting of the persons possessed of or interested in such Fishery to be called. Notice of the day and place for such meeting to be given, not less than 14 days from the date of such notice by handbills and advertisement, twice at least, in some newspaper

published and circulating in the county or several counties, within which, or on the coast whereof, such Fishery is in whole or part situated.

24. Decision to be published in *Dublin Gazette*, and in some one newspaper circulating in the county or each of the counties within which such Fishery is in whole or part situated; and a copy lodged in the offices of the Clerks of Peace and Petty Sessions; and such other publicity, by posting of handbills or otherwise, as shall seem fit. Decision to be published. 5 & 6 Vic., c. 106, s. 34.

25. For the purpose of convicting any person offending against such decision, a copy of the *Gazette* containing such decision, or an attested copy of such decision, obtained from the office of the Clerk of the Peace (who is required to furnish same on payment of a sum not exceeding twopence for every seventy-two words) conclusive evidence of the existence of such decision and of the due publication thereof. Offences against such decision. 5 & 6 Vic., c. 106, s. 34.

26. Constabulary empowered to enforce the regulations for the observance of the Close Season. Constabulary 7 & 8 Vic., c. 108, s. 2.

27. Coast-guard empowered to enforce provisions of Act, or any Order, Regulation, or By-law. Coast Guard. 5 & 6 Vic., c. 106, s. 86.

28. Inspectors empowered to permit, for or in any district or place, the dredging for Oysters from any natural public Bed, lying below the level of the lowest water of Spring Tides, during such part of the Close Season as they may think fit to appoint, for the purpose of replenishing and supplying artificial Oyster Beds or Layings, or other Beds and Layings the exclusive property of any person, but for no other purpose whatsoever. Power to dredge during part of close time. 8 & 9 Vic., c. 108, s. 19.

29. If any Oysters so taken in the Close Season brought to shore, or sold or offered for sale, or found in the possession of any person on land, or used for any other purpose than the replenishing or supplying any such artificial or other Bed, the person offending shall forfeit such Oysters, and be liable to penalty not exceeding Five Pounds and not less than Ten Shillings. Penalty for bringing on shore, &c. 8 & 9 Vic., c. 108, s. 19. 5 & 6 Vic., c. 106, s. 36, and 11 & 12 Vic., c. 92, s. 42.

30. Inspectors empowered to prohibit, during any part of the Close Season, that any Boat shall have on board a Dredge or other implement for taking Oysters. Inspectors may prohibit Dredge on board during close season. 8 & 9 Vic., c. 108, s. 20.

By-Laws, &c.

31. Inspectors empowered, upon the application of any person interested in any Oyster Fishery in any particular locality, to decide upon, fix, and appoint a period, not exceeding Three Years, within which it shall not be lawful to dredge for, take, catch, or destroy any Oyster or Oyster Brood in such locality. Before any such Order made, meeting to be called as in the case of altering Close Season (*see No.* 23), and decision published as directed (*see No.* 24). Inspectors may suspend for a fixed period Oyster Fishery in any locality. 7 & 8 Vic., c. 108, s. 5.

32. Inspectors empowered to make By-laws, Rules, and Regulations, as to them shall seem expedient, to prevent the destruction or removal from the Natural Beds of small unsizable Oysters, and to fix the size or dimensions of the smallest Oysters which may be removed; and to appoint such means to be adopted in dredging and culling Oysters on the fishing grounds as will secure the return to the sea of all Oysters of May make By-laws for improvement of Oyster Fisheries. 8 & 9 Vic., c. 108, s. 20,

less dimensions than those to be so fixed ; and during any part of the Close Season, or in places where dredging for Oysters shall be prohibited, to prohibit that any Boat shall have on board a Dredge or other implements for taking Oysters ; and to make such other Rules and Regulations as they think fit for the increase, improvement, and protection of the Oyster Fisheries.

Publication of intended By-laws. 5 & 6 Vic., c. 106, s. 92.

33. Copies of such By-laws to be lodged with Clerks of Peace and Petty Sessions, and notice thereof posted at the usual places for posting notices in each Petty Sessions District at least One Month before same laid before Lord Lieutenant in Council for approval

Appeal against. 5 & 6 Vic., c. 106, s. 92.

34. Any person aggrieved may appeal against same to Lord Lieutenant in Council.

Publication of. 5 & 6 Vic., c. 106, s. 93.

35. When approved by Lord Lieutenant in Council, to be lodged with Clerks of Peace and Petty Sessions, and with Coast-guard Officers, and in such places as to the Inspectors shall seem fit. Printed copies to be provided and sold at a price not exceeding One Shilling for each copy ; and notice of publication, and place where same may be purchased, to be given for Three Months subsequent to publication in such of the Metropolitan and Provincial Papers as Inspectors shall appoint.

Evidence of. 5 & 6 Vic., c. 106, s. 93.

36. Printed copy of By-law, &c., obtained from Clerk of Peace or Petty or Quarter Sessions, and certified to be a true copy, evidence of existence of By-law, and of the due publication thereof.

(*For copies of By-laws, &c., in force, see Appendix* A.)

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31 & 32 Vic., c. 45, s. 67.

37. Inspectors of Irish Fisheries may from time to time lay before Her Majesty in Council By-laws for restricting or regulating dredging for Oysters on any Oyster Beds or Banks within twenty miles, measured from a straight line drawn from the eastern point of Lambay Island to Carnsore Point. And all such By-laws shall apply equally to all Boats and persons on whom they may be binding. Her Majesty may, by Order in Council (*a*) direct such By-laws to be observed ; (*b*) impose penalties not exceeding Twenty Pounds for breach of any such By-law ; (*c*) apply to the breach of such By-laws, such (if any) of the enactments in force respecting the breach of the Regulations respecting Irish Oyster Fisheries within the exclusive Fishery Limits of the British Islands, and with such modifications and alterations as may be found desirable ; (*d*) revoke or alter any Order so made.

The Close Time, by any such Order, not to be shorter than that prescribed for the time being by the Inspectors of Irish Fisheries, in respect of Beds within the exclusive Fishery Limits of the British Islands.

Every such Order binding on all British Sea Fishing Boats, and on any other Sea Fishing Boats in that behalf specified in the Order, and on the Crews of such Boats. (*See Appendix* A.)

Water Bailiffs.

Proprietors, &c. of Oyster Bed may appoint Water Bailiffs. 8 & 9 Vic., c. 108, s. 21.

38. Proprietor or Tenant of any Oyster Bed or Laying, or any associated body of persons interested in the protection and improvement of any Oyster Fishery, may appoint Water Bailiffs for protection of Fishery, and for enforcement of provisions of Act, and of any By-laws, Rules, and Regulations.

39. Water Bailiffs so appointed may exercise and use all the powers and authorities of a Constable, so far as the same may be necessary. (*For powers of Water Bailiffs—see also* 5 & 6 *Vic., c.* 106, *s.* 84, and impeding or obstructing, *ib.* s. 90.)

Powers of. 8 & 9 Vic., c. 108, s. 21.

40. Appointment must be approved and confirmed by two or more Justices in Petty Sessions in the district within which Bailiff is to act, and Justices shall indorse the Warrant, and may revoke appointment and dismiss such Bailiff, and approve and confirm appointment of some other person.

Appointment of, to be confirmed by Justices. 5 & 6 Vic, c. 106, s. 82.

41. Warrant subject to Stamp Duty of Five Shillings. (*For form of Warrant—see Appendix* B.)

Subject to Stamp Duty. 8 & 9 Vic., c. 108, s. 13.

General Provisions.

42. Any person stealing any Oysters or Oyster Brood from any Oyster Bed, Laying, or Fishery, the property of any other person, and sufficiently marked out or known as such, guilty of Felony, and liable to be punished as in the case of Simple Larceny.

Stealing oysters, felony. 24 & 25 Vic., c. 96, s. 26.

43. Any person unlawfully and wilfully using any Dredge, Net, Instrument, or Engine whatsoever, within the limits of any Oyster Fishery, being the property of any other person, and sufficiently marked out or known as such, for the purpose of taking Oysters or Oyster Brood, although none shall be actually taken, or unlawfully and wilfully, with any Engine dragging upon the ground or soil of such Fishery, guilty of a Misdemeanour, and liable to be imprisoned for a period not exceeding Three Months with hard labour, and with or without solitary confinement.

Using any engine within limits of Oyster Fishery. 24 & 25 Vic., c. 96, s. 26.

44. Nothing to prevent any person taking Floating Fish within the limits of any Oyster Fishery with any Net or Engine adapted for taking Floating Fish only.

Not to prevent the taking of floating fish. 24 & 25 Vic., c. 96, s. 26.

45. All Oysters being in or on any Oyster Bed, Laying, or Fishery which is the property of any person, and is sufficiently marked out or known as such, shall be the absolute property of such person, and in all Courts of Law and Equity and elsewhere, and for all purposes, civil, criminal, or other, shall be deemed to be in the actual possession of such person.

Oysters in the Oyster Grounds or Fishery to be Owner's property. 30 Vic., c. 18, s. 3.

46. All Oysters removed by any person from any such Oyster Bed, Laying, or Fishery, and not either sold in market overt, or disposed of by or under the authority of the person to whom such Bed, Laying, or Fishery belongs as aforesaid, shall be the absolute property of such last-mentioned person, and in all Courts of Law and Equity and elsewhere, and for all purposes, civil, criminal, or other, the absolute right to the possession thereof shall be deemed to be in such last-mentioned person.

Oysters removed from the Fishery to be Owner's property. 30 Vic., c. 18, s. 4.

47. If any person found offending, any Officer or person empowered to enforce provisions of Act, or any person interested in the Fishery, may require him to desist from such offence, and also to tell his Christian name and surname and place of abode, and in case of refusal or giving a general description of his abode, so as to be illusory for the purpose of discovery, or continuing offence, lawful for the officer or person so requiring, and any person acting by his order and in his aid to apprehend such offender and convey him before a Justice of the Peace. Offender not to be detained longer than *Twelve* Hours. (See sec. 87 in Act.)

Offenders may be apprehended if they refuse to tell their names. 5 & 6 Vic., c. 106, s. 87.

Using violence. 5 & 6 Vic., c. 106, s. 88.

48. Where any persons, to the number of Three or more together, shall by violence, intimidation, or menace, attempt to impede or obstruct any other person in the lawful prosecution of any Fishery, any Bailiff, Officer of Her Majesty's Navy or Coast-guard, or Peace Officer, and any person acting by their order or in their aid may apprehend such offenders and convey them before a Justice of the Peace. Offenders liable to a penalty of Twenty Pounds and costs, in addition to any other penalty to which they may be liable for any other offence against Act.

How offences may be tried. 5 & 6 Vic., c. 106, s. 94.

49. Offences may be tried and adjudged and determined on in a summary way by one or more Justices of the Peace, on the complaint, verbal or otherwise, of any person.

Proceedings under Petty Sessions Acts. 29 & 30 Vic., c. 97, s. 11.

50. Proceedings to be under Petty Sessions and Summary Jurisdiction Acts (1851).

Evidence of Informers, Owners, &c. admissible. 5 & 6 Vic., c. 106, s. 104.

51. Evidence of Informers, Owners, or Occupiers of or persons interested in the Fishery, or any person, though entitled to a proportion of the penalty, admissible.

Bait Beds.

Bait beds may be made. 5 & 6 Vic., c. 106, s. 13.

53. Inspectors empowered to grant to any Owners or Occupiers of land bordering on the Sea or any estuary, or to any person, with the consent of such Owner or Occupier, Licences for the formation of Bait Beds between high and low water marks, and in all other places adjacent to their respective portions of lands, as shall be suitable for the purpose. Such Beds to be held as private property, and the Licencees to hold exclusive control over them so long as they shall be Owners or Occupiers of such land. Licence to be granted only where no public Banks or Beds at present exist.

Interfering with or taking away bait from such. 5 & 6 Vic., c. 106, s. 13.

54. Any person interfering with or taking away Bait from such Bed after its formation, without consent of Owner or Occupier, liable to a penalty of Five Pounds.

Appendix A.—Abstract of By-Laws, Orders, &c., in Force to 31st December, 1869.

South-east Coast of Ireland, from Wicklow Head to Carnsore Point.—(*1st September*, 1868.)

That the Close Time, during which it shall not be lawful to dredge for, take, catch, or destroy any Oysters or Oyster Brood, on or off the South-east coast of Ireland, between Wicklow Head and Carnsore Point, shall be between the 30th April and the 1st September in each year.

Coasts of Dublin, Wicklow, and Wexford.—(*23rd April*, 1869.) *Approved by Her Majesty in Council*, *29th April*, 1869.

Prohibiting between the 30th April and 1st September in each year the dredging for, taking, catching, or destroying any Oyster or Oyster Brood on or off any part of the East and South-East Coast of Ireland, within the distance of Twenty miles measured from a straight line drawn from the Eastern point of Lambay Island in the county Dublin to Carnsore Point in the county Wexford, outside the exclusive Fishery Limits of the British Islands.

Wexford Coast.—(*8th April*, 1862.)

First—All persons engaged in fishing for or taking Oysters off the Wexford Coast, south of Raven Point, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground

or Oyster Bed any Oyster of less dimensions than three inches, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any Oyster Bed, Rock, Strand, or Shore, off said Wexford Coast, south of Raven Point, any Oyster of less dimensions than three inches, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.

Second—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground off the said Wexford Coast, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.

CORK HARBOUR.—(28*th October*, 1853.)

First—That between the 1st May and the 1st September, no boat shall have on board any dredge or other implement for taking Oysters. Penalty, Two Pounds.

Second—Every fisherman shall, on the fishing ground, cull all Oysters, and shall not remove any Oyster of less dimensions than two and a-half inches at the greatest diameter thereof; and shall throw back into the Sea all gravel and fragments of shells as he shall raise while engaged in such fishing. Penalty, Two Pounds.

Third—All persons are prohibited from throwing into the Sea, on any Oyster Bed or Oyster Fishing Ground, the ballast of any boat, or any other matter or thing injurious to the Oyster Fishery. Penalty, Two Pounds.

Fourth—No person shall, between Sunset and Sunrise, dredge for, take, or catch any Oysters within the Harbour of Cork. Penalty, Five Pounds.

TRALEE BAY.—(28*th September*, 1860.)

First—That between the 1st day of April and the 1st day of November in any year, being the Close Season for Oysters in the said Bay of Tralee, no boat, in the said Bay of Tralee, shall have on board any dredge or other implement for the taking of Oysters; and if, between the periods aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.

Second—All persons engaged in fishing for or taking Oysters in said Bay of Tralee, shall cull all such Oysters as may be taken or caught; and shall not remove from any fishing ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any rock, strand, or shore of said Bay of Tralee, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.

Third—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground in the said Bay of Tralee, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.

GALWAY BAY.—(18*th March*, 1868.)

First—All persons engaged in fishing for or taking Oysters in Galway Bay shall, on the Fishing Ground, cull all such Oysters as may be taken or caught, and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, and all such gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.

Second—All persons are hereby prohibited from throwing into the Sea on any Oyster Bed, or Oyster Fishing Ground, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each such offence, forfeit and pay a sum of Two Pounds.

Third—No person shall, between Sunset and Sunrise, dredge for, take, or catch any Oysters within said Bay, or any of the Estuaries of the Rivers flowing into the same; and every person acting contrary hereto shall, for each offence, forfeit and pay a sum of Five Pounds.

Fourth—That between Nine o'clock in the evening of any day and Six o'clock in the morning of the following day, no boat shall have on board any dredge or other implement for the taking of Oysters; and if, between the hours aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the Master or Owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.

ACHILL SOUND, CLEW BAY, AND BLACKSOD BAY—
(15*th December*, 1860.)

First—That between the 1st day of April and the 1st day of October in any year, being the Close Season for Oysters in said Clew Bay, Achill Sound, and Blacksod Bay, no boat, in the said Clew Bay, Achill Sound, and Blacksod Bay, shall have on board any dredge or other implement for the taking of Oysters; and if between the periods aforesaid there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall for each such offence, forfeit and pay a sum of Five Pounds.

Second—All persons engaged in fishing for or taking Oysters in said Clew Bay, Achill Sound, and Blacksod Bay, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing; and no person shall take from any rock, strand, bed, or shore of said Clew Bay, Achill Sound, and Blacksod Bay, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and pay a sum of Two Pounds.

Third—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground in said Clew Bay, Achill Sound, and Blacksod Bay, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.

Fourth—No person shall, between Sunset and Sunrise, dredge for, take, or catch, any Oysters within said Clew Bay, Achill Sound, and Blacksod Bay; and every person acting contrary hereto shall, for each offence, forfeit and pay a sum of Five Pounds.

Clew Bay, County Mayo.—(*1st April*, 1865.)

That for the sole purpose of replenishing and supplying licensed Oyster Beds and other Oyster Beds, the exclusive property of any person or persons within Clew Bay alone, in the County of Mayo, and for no other purpose whatever, it may be lawful for any person to dredge for and take Oysters from any natural Public Bed in the said Clew Bay lying below the level of the lowest water of Spring Tides, between the 1st and 15th April, and the 20th June and 1st October in each year, such periods being respectively included within the Close Time at present fixed for the Oyster Fisheries within the said Clew Bay: Provided always, that if any Oysters dredged or taken during such part of the Close Season shall be brought to shore, or sold or offered for sale, or be found in the possession of any person on land, or be used for any other purpose than the replenishing or supplying any such artificial or other Bed as aforesaid, every person so offending shall forfeit all such Oysters, and be subject and liable to the same penalties and forfeitures as by said first-recited Act (5 & 6 Vic.) prescribed in cases of offences against the provisions of the said first-recited Act for the observance of the Close Season in respect of Oysters.

Carlingford Lough.—(*17th April*, 1860.)

First—That between the 1st day of March and 1st day of November in any year, it shall not be lawful for any person to dredge for, take, catch, or destroy any Oysters or Oyster Brood within the said Lough of Carlingford, or off or from any of the shores or rocks of said Lough, and any person offending against this By-Law shall, for each such offence, forfeit and pay a sum of Five Pounds.

Second—That between the 1st day of March and the 1st day of November in any year, no boat, in the said Lough of Carlingford, shall have on board any dredge or other implement for the taking of Oysters; and if, between the periods aforesaid, there shall be on board any boat any such dredge or other implement for the taking of Oysters, the master or owner of such boat shall, for each such offence, forfeit and pay a sum of Five Pounds.

Third—All persons engaged in fishing for or taking Oysters in said Lough of Carlingford, shall cull all such Oysters as may be taken or caught; and shall not remove from any Fishing Ground or Oyster Bed any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof, and shall immediately throw back into the Sea all Oysters of less dimensions than aforesaid, as well as all gravel and fragments of shells as shall be raised or taken while engaged in such fishing, and no person shall take from any rock, strand, or shore of said Lough of Carlingford, any Oyster of less dimensions than two inches and one-half, at the greatest diameter thereof; and any person offending in any respect against this By-Law, Rule, or Regulation shall, for each offence, forfeit and a pay sum of Two Pounds.

Fourth—All persons are hereby prohibited from throwing into the Sea, on any Oyster Bed, or Oyster Fishing Ground in the said Lough of Carlingford, the ballast of any boat, or any other matter or thing injurious or detrimental to the Oyster Fishery; and all persons acting contrary hereto shall, for each offence, forfeit and pay a sum of Two Pounds.

APPENDIX H.

REPORT on the COMPOSITION of the SOILS of OYSTER GROUNDS; and on the QUALITIES which exert most INFLUENCE on OYSTER CULTIVATION, by W. K. SULLIVAN, PH.D., Professor of Chemistry to the Catholic University and the Royal College of Science, and Secretary of the Royal Irish Academy.

The circumstances which influence the production and growth of the animals which inhabit the sea-shore are :—

1. Temperature ;
2. Depth of water at high and low water ,
3. Comparative amount of sunshine, especially the relative amount which falls during low water in the spawning season ;
4. Saltness of the water, in connexion with great rainfalls, and the influx of fresh water from rivers and brooks ;
5. Currents ;
6. Suspended matter ;
7. Nature of the shore and sea bottom.

Temperature may be considered from three points of view :—the mean annual temperature of the water, the maxima and minima temperatures during the season of spawning, and the mixture of currents of cold and warm waters which is very destructive to some kinds of animals, especially if it occurs during spawning.

The depth of water influences the amount of light which penetrates the water, the aeration of the water, and the temperature.

The amount of sunshine influences the amount of oxygen in the water, and consequently the greater or lesser activity of all forms of animal life. When high water occurs about noon, during the time of reproduction of the animals and plants which live in the intertidal zone, the action of the sun is greatest, and the development of life most active. It is the reverse in the zone beyond low water-mark. The young of those animals which spawn in shallow water, beyond low water-mark, when the tide is low, and when low water occurs in the middle of the day in summer, develop more rapidly than when the spawning takes place in very deep water, and when low water occurs in the evening or morning. The height to which the tide rises is otherwise also of importance, not only to the zone between low and high water, but to the zone beyond low water-mark. The alternation of deep and shallow water exposes the plants and sedentary animals to successive alternations of temperature, and to great variations in the amount of gases in the water.

Great falls of rain sometimes suddenly add such quantities of fresh water to the inner zone of sea water as to materially alter, often for many hours, the character of the water. Such a change must seriously affect young animals if it takes place during spawning. The same effect is permanently produced in estuaries and bays into which rivers flow. In this case the marine fauna differs from that along the shores of the open sea. Even here the production of certain forms of animal life may be greatly affected by a sudden accession of fresh water brought into the estuary by floods. Fresh water also brings down large quantities of organic matter in solution and in suspension ; the drainage of cities and towns, which helps the development of certain kinds of infusoriæ, favours the growth of certain plants and animals, and retards that of others.

Strong currents and waves exert very great influence on animal life, especially on its distribution. Animals and plants do not thrive, as a rule, where the water is agitated very much ; indeed shingle shores, over which the waves break with violence, are notoriously barren of life,

especially of plants and sedentary animals. Strong currents also act in another way, they carry along a quantity of suspended matter which is injurious to sedentary animals.

The nature of the soil of the shore and sea bottom is intimately connected with currents and the moving power of water. The suspended matter brought down by rivers, and the matter derived from the gradual eating away of the coasts are deposited in accordance with three causes: size of the suspended matter, its specific gravity, and its form; that is, the largest, densest, and roundest particles are those first deposited. Loose matter is lifted up by moving water in accordance with similar laws; namely, the smallest, least dense, and roundest fragments are first moved; the largest, densest, and flatest last. The effect of these laws is that the loose matter of shores is sifted and sorted, and the same thing happens with the suspended matter of rivers. In one place we find, according to the velocity of the currents, the shingle, in another the sand, and in a third the mud. But not only is gravel separated from the sand, and the latter from the mud, the round rolled gravel is not mingled with the flat shingle, or the granular mud with the highly hydrated unctuous clay, provided the motion of the water has been sufficient to permit of the loose materials being thoroughly sifted. By the action of the variable force of tidal currents, this kind of perpetual sifting of the loose materials of sea coasts and sea bottoms is always going on. Each kind of material thus sifted out has its own fauna and flora. Submarine rocks sheltered from the violence of the waves and the force of currents, and favourably circumstanced as to temperature and sunlight, are always covered with a rich vegetation and peopled with varied forms of animal life. Mud when sheltered from the disturbing action of the waves, or when sufficiently consolidated not to be moved at every rise and fall of the tide, becomes covered with vegetation and sedentary animals. On the other hand, no vegetation fixes itself on fine mud which is continually being moved by the rise and fall of the tide. The only animals which can live on such a mud bank are annelides, and other creatures which bury themselves in it. This is also the case where the suspended matter of rivers continually deposit fresh layers of mud, even though the deposited mud may not be again disturbed. Those mollusca and annelides which can bury themselves below the line of tidal disturbance of the sand, can live on sandy shores even in shallow waters; but scarcely any form of animal life can exist on a shingle shore. Even the slightest change in the angle of declivity of a sandy beach alters the conditions of animal life, and consequently more or less affects the fauna.

Independent of this general effect which the *mechanical constitution* of the shore and littoral sea bottom has on marine plants and sedentary animals inhabiting it, the *nature* of the soil, conjointly with the other causes above enumerated, by the influence which they exert on the food of plants and animals, produce a marked action on the character of the flora and fauna, that is, upon the association of species.

Even upon the individuals of the same species of animal the soil is found to exert so great an influence that fishermen can often distinguish the individuals from different localities, even from places not far removed from each other. This is especially the case with oysters, the shape, size, colour, and flavour of which are almost as various as those of fruit or tobacco grown on different soils. Were we able to determine the specific qualities of the soil which produce those differences in the qualities of oysters it would be an important step in their cultivation. Again, soils favourable for the reproduction of the oyster are not always equally favourable for their subsequent development; and again, there are many places where oysters thrive, but where they cannot breed. This

problem of the specific influence of the soil is, however, a very difficult and complicated one. First, because it is almost impossible to separate the specific action of the soil from those of the other causes enumerated; and next, because, though much has been written on the subject of oysters, I do not know of any systematic series of experiments carried out upon different soils and for a sufficient length of time to enable accidental causes to be eliminated, which could afford a clue to the determination of the relative importance of the action of the several causes above enumerated, at the different stages of development of the oyster.

In the absence of such experiments it is clearly worth while to give the results of a comparative analysis of muds from well-known oyster localities, made with a view of determining whether the chemical composition, or rather, the mineralogical character of the soil exercised any, and if any, what influence upon the growth of oysters. For this purpose the Royal Commissioners placed at my disposal a considerable number of specimens of soils from natural oyster beds, and from places where artificial oyster cultivation had been tried either successfully or unsuccessfully.

The remains of plants and animals mixed up with the sand or mud in the small samples sent to me for examination could not, save in exceptional cases, be in such a state of preservation as to enable me to determine with certainty the species to which they belonged. But even were it otherwise, the small number of individuals, and the necessarily very limited examples of different genera and species which such small samples could contain, would give but a very inadequate idea of the flora and fauna of each oyster bed, and of the adjoining littoral sea bottom. In describing the character of each sand or mud I have, nevertheless, noted the plants and animals present (with the exception of the microscopical ones), wherever the remains were sufficiently preserved to enable me to do so. Generally the species observed were those which seem to exist abundantly in most oyster grounds.

I believe the character and abundance of Diatomacea and Rhizopoda, and other microscopic animals, in oyster grounds, is of primary importance in connexion with oyster cultivation. The green colour of the Colchester and Marennes oyster shows how much the quality may be affected by such organisms. It is probable that the action or influence of the soil of oyster grounds upon the oyster at the various stages of its growth depends mainly upon the nature and comparative abundance of the Diatomacea, Rhizopoda, Infusoria, and other microscopical organisms which inhabit the ground. I have accordingly always noted where the mud appeared to be rich in Diatomacea, Foraminifera, and other microscopic organisms. A thorough study of a few differently situated oyster grounds exhibiting well-marked differences in the character of the oyster from this point of view by a competent microscopist acquainted with the classes of plants and animals just mentioned would be of great scientific interest and practical importance.

As the green colour of the mantle of oysters from certain localities just referred to is commonly attributed to copper, and as such oysters are consequently believed very generally to be poisonous, and their value therefore greatly depreciated, I made the most careful search for traces of that metal in the muds which I had received from grounds known to produce green-bearded oysters. Oysters and other mollusca placed in solutions containing copper and other metals absorb them, and retain them in their tissues. I have had two or three opportunities of examining oysters which had assimilated copper owing to mine-water containing it being allowed to flow into estuaries at places close to oyster

beds. In every case the copper was found in the body only of the oyster, which it coloured blueish green, and not in the mantle or beard, *which was not green*. In the green-bearded oysters which I have had an opportunity of examining, the body was not green, and no trace of copper could be detected in any part of the animal. The colour, too, was not the same as that of the true copper oysters, but rather that which would result from the deposition of chlorophyl or other similar chloroid vegetable body in the cells.

The sands and muds examined were from the following localities :—

France.	1. The River La Trinite, or Crach Auray, Department of Morbihan.
	2. Marennes, Department of Charente.
	3. Arcachon, Department of Gironde.*
England.	1. The River Crouch, Essex.
	2. The River Roach, Ditto.
	3. Hayling Island, Hampshire.
Ireland.	1. Lough Swilly, county of Donegal.
	2. Ballysadare, county of Sligo.
	3. Aughinish Bay, county of Galway.
	4. Roundstone Bay, Ditto.
	5. Traroe, county of Clare.
	6. Ballyvaughan, Ditto.
	7. Besborough, north shore of the Estuary of the Shannon, county of Clare.
	8. Carrig Island, south shore of the Estuary of the Shannon, county of Kerry.
	9. Valentia, county of Kerry.
	10. Sneem, Ditto.
	11. Foaty Island, county of Cork.
	12. Tramore, county of Waterford.

I shall follow the same order in describing the several specimens.

France.

1. *River La Trinité, Auray, Department of Morbihan.*—Sample of mud from the best oyster ground, furnished by the Baron de Wolbock.

Description.—Loamy alluvial mud, free from gravel, of a yellowish-gray colour when dry. Grayish-blue externally, when fresh and moist; but of an intense black colour internally. Oxydized readily to a yellowish-gray when exposed to air and light. When dry it formed a brittle, friable, porous mass, not at all like plastic clay. When washed it left a good deal of sand, consisting of quartz, minute fragments of felspar, fluor, and spangles of mica, mixed with abundance of comminuted shells. The washed clay was free from carbonates. The vegetable fragments and plants intermixed with the clay belonged to: Zostera marina, Chordina flagelliformis, Litosiphon pusilus, and, apparently, to a species of Carpomitra. The remains of mollusca belonged chiefly to: Cerithium reticulatum, Buccinum undatum, a species of Dentalium, apparently D. tarentinum, a species of Astarte (A. Sulcata?), and young oysters. The mud contained abundance of Diatomacea, Rhizopoda, and, apparently, other microscopical organisms.

The rocks along this part of the coast of France are granite, gneiss, and lower palæozoic slates and grits, a good deal altered. The sand, gravel, and shingle of the coast are derived from these rocks. The fine mud which serves to hold the sand together is a highly hydrated alluvial mud,

* Some doubt having arisen as to the specimen from Arcachon being from that locality at all, the description has been omitted.

originally derived from the decomposition of felspar and slate rocks, and mixed with, more or less, organic matter, most of it being derived from microscopic plants and animals.

2. *Marennes, Department of Charente.*—Specimen of shelly sand (*Sable Vazal Coquillé*) from a locality suitable for breeding, sent by M. Costè.

Description.—Fine quartzose sand, containing spangles of mica, mixed with a fine bluish highly hydrated mud, which was of a yellow colour when exposed to sunlight. It was full of whole and broken fragments of shells (chiefly Cerithium reticulatum in great abundance, Adeorbis subcarinatus, Buccinum (probably B. undatum), Cardium edule (?), and young oysters). The centre of the mass was very black, and contained Diatomaceæ, Foraminifera, and Infusoria. Bits of Ulva latissima were also mixed up with this and No. 3 mud from the same locality. The coast of France, in the neighbourhood of Marennes, consists of the chalk marl, or Turonian series of cretaceous rocks, Eocene sandstones and clays, drift gravels, and alluvium. The sand and mud of the shore and littoral sea-bottom is derived chiefly from the tertiary rocks.

3. *Marennes.*—Specimen of fine sedimentary mud (*Terre Glaise*) from a locality which has proved successful both for breeding and fattening, sent by M. Coste.

Description.—This specimen consisted of the same sand and clay as No. 2, but in different proportions, the clay predominating in this specimen, the sand in No. 2. Owing to the abundance of clay, the colour was more bluish than that of No. 2, and the centre of the mass much blacker when not exposed to air and light. The intermixed shells were also abundant, but the microscopical organisms were especially abundant. The clay free from shells did not effervesce.

No trace of copper could be detected in either of the preceding muds from Marennes.

ENGLAND.

4. *River Roach, Essex.*—Sample of mud from oyster ground.

Description.—Alluvial mud, consisting of blueish-black slightly calcareous plastic clay, and much quartzose sand. It was free from pebbles, except some fragments of comminuted shells. The sample examined contained no remains of plants except a pine shaving. The centre of the mass excluded from the air was quite black from the decomposition of organic matter, derived chiefly from microscopical animal organisms, Diatomaceæ, &c. No trace of copper was detected in this mud. A copper nail, a pin, or other object of copper or brass, dropped on the shore, or from a boat, may give rise to accidental traces of copper, but otherwise it is not likely that any copper occurs naturally in solution in the water of this river.

5. *River Crouch, Essex.*—Sample of mud from oyster ground.

Description.—A yellowish gray mixture of quartzose sandy clay, and fine gravel, chiefly made up of comminuted bivalve shells, and some pebbles of yellowish and brownish cherty quartz, and chalk flints. The clay separated from the gravel and quartz sand was slightly calcareous. The only remains of plants noticed were bits of Zostera. The fine mud freed from sand like that from the river Roach was highly hydrated, and contained Diatomaceæ and Infusoria in comparative abundance. The decomposition of these microscopical organisms, and of other vegetable and animal matter, caused the moist mass to blacken when air was excluded. No trace of copper could be detected in this sample also.

6. *Hayling Island, Hampshire.*—Sample of mud from *Cockle Rythe.*

Description.—Grayish blue, highly unctuous plastic clay, with intermixed fine white sand like that produced by the denudation of certain

chalk rocks. The sand was not uniformly distributed through the mud, as if the latter rested on a deposit of sand, or that currents brought sand in from time to time. It also contained fragments of chalk flints, bits of coal and cinders, probably part of the ashes, &c., thrown over board by steamers, fragments of woody matter, twigs, reeds, and what appeared to be Zostera marina. The interior of the moist mass was very black from decomposing microscopic animal and vegetable matter. Like most blue clays, it oxydized to a yellow colour when exposed in a moist state to the sun and air. The fine mud is not calcareous.

7. *Hayling Island.*—Sample of mud from *Mengham Rythe.*

Description.—Very similar to that from Cockle Rythe. It had less sand, however, and was more plastic. It contained fragments of plants like reeds, and a species seemingly of Chordaria. The centre of the mass was very black, from decomposing microscopic organisms. On exposing the moist mass to sun and air, it oxydized and assumed a yellow colour. The fine mud is not calcareous.

8. *Hayling Island.*—Sample of mud from *Langston Channel.*

Description.—Blueish-black, and in the centre of mass intensely black, unctuous plastic clay, which oxydizes, and assumes a yellow colour when exposed in a moist state to sun and air. It did not effervesce with acid. When washed it left a small quantity of fine white quartz sand. Bits of Zostera marina, fragments of apparently a Chordaria, and fine root-like filaments. Abundant evidence of microscopic organisms.

9. *Hayling Island.*—Sample of mud marked A^2.

Description.—Grayish blue, and in centre, black unctuous plastic clay, which oxydizes, and assumes a yellow colour when exposed to the sun and air. It gave, when washed, some quartz sand, fragments of black chalk flints, rounded fragments of white chalk, and white limestone; several leaves of dicotyledonous trees were also found.

10. *Hayling Island.*—Sample of clay marked "Bed B., marl from high ground, mud at bottom from deep water."

Description.—Very unctuous blue clay, intensely black in the centre of the mass. When exposed to the sun and air it oxydizes, and assumes a yellow colour. When washed it yielded a little fine sand, comminuted shells, fragments of more or less indurated chalk and of vegetable matter, like sea weeds. The amount of sand and gravel was very small.

The whole of the Hayling muds are derived from the Lower Eocene dark blue clays and sands of the Hampshire Basin, which represent the London Clay of the London Basin. The descriptions above given apply equally well to the true "London Clay" muds of the estuary of the Thames. The Langston Channel mud appeared to be the one richest in microscopic life.

Ireland.

11. *Lough Swilly, co. of Donegal.*—Sample of sand from a bed formerly successful.

Description. — Fine clay slate mud, mixed with quartz sand, a little slate debris, and a large proportion of comminuted shells. The interior of the mass was very black. This mud resembled very much the mud from Marennes, described under No. 3, and which was from a locality where oysters are both bred and fattened.

12. *Lough Swilly.*—Sample from cleaned bottom of Mr. Hart's enclosed pond at Fahan.

Description.—Coarse gravel of blue and greenish schists, intermingled with stiff very plastic clay of a gray colour where it is sandy.

13. *Lough Swilly.*—Sample of the fine silt which deposits on the cleaned bottom of Mr. Hart's enclosed pond at Fahan.

Description.—Blue, highly hydrated silty clay, intensely black in the interior of the mass from the decomposition of organic matter, chiefly derived from microscopic animal organisms, intermixed with sand of local rocks, chiefly green and gray schists and grits, vein quartz, and with broken shells.

Mr. Hart describes the cleaned bottom of his pond as follows:—"It has a basis of strong clay; on this a dark shelly sand (left when the soft mud [No. 13] was scraped off), and on the sand a thick coating of gravel, which is now slightly coated with silt" [No. 13]. This silt covers the bottom of the uncleaned portion of the pond, and "finds its way to the cleaned part of the pond where the oysters are laid down, and appears to have very nutritive properties."

14. *Lough Swilly.*—Specimen of sand, gravel, &c., of the outer shore, near Mr. Hart's pond.

Description.—Sand and gravel: beach sand with intermingled pebbles of various sizes, chiefly of schists, grits, vein quartz, melaphyre, a good-sized pebble of limestone. Clay: Amber-coloured stiff clay, containing no organic matter, and not flocculent like the deposited muds rich in microscopical animal matter.

Mr. Hart thus describes No. 14:—"Samples of the different sorts of soil found in a spadeful of stuff dug from the open foreshore. In most places the clay is further from the surface, the deposit of sandy mud and gravel on it being deeper the greater is the distance from high water mark. Shells, principally those of the Anomia or saddle oyster, are plentifully scattered on the shore."

The shores of Lough Swilly and the surrounding district consist of gneiss, mica schist, quartz rock, and Lower Silurian altered limestone. Greenstone dykes also occur in the slates. The soils, 11, 12, 13, and 14, are derived from these rocks.

15. *Ballysadare Bay, county of Sligo.*—Three samples of mud from one of the best beds belonging to Mr. Creighton.

Description.—*a.* Beach sand composed of comminuted shells, quartz sand, and brownish grits fragments. Bits of bright green sea-weed—apparently an Ulva—were mixed up with the sand.

b. Beach sand somewhat coarser than *a*, containing fragments of chert, and small pebbles of grits.

c. Sand of fine comminuted shells, worn fragments of shells, and brownish grit pebbles. The latter and some of the shell fragments were coated with patches of brownish red lichen-like sea-weed.

There was very little clay-silt in either of the specimens, which were however small in quantity. Diatomaceæ and Rhizopoda could however be detected in it when separated as well as possible from the sand.

16. *Rosmuck, near Ballinahinch, county of Galway.*—Sand from Mr. Robinson's oyster grounds.

Description.—White coral sand like that of Roundstone and other bays on the coast of Galway, containing a few oyster shells and Lucina Spinifera (?). The local rocks are granitoid and quartz rock, but the coral sand contained no gravel or fragments of them.

17. Sample of an oyster bed from the same district as No. 16.

Description.—A mass of oyster shells resting on coral sand intermixed with a fine dark grayish, very hydrated silt, rich in animal matter. No trace of local gravel.

18. *Aughinish Bay, south shore of Galway Bay.*—Sample of soil suitable for fattening oysters, said to be similar to the Red Bank of Burren.

Description.—Fine porous calcareous sand, intermixed with a highly hydrated silty clay, comminuted shells, and quartzose sand. There were also many large fragments of univalve and bivalve shells, and fragments

of chert covered with Litosiphon pusilus. The local rock is Carboniferous limestone, from which the whole of the mud is evidently derived.

19. *Burren, county of Clare.*—Sample of bottom of the Red Bank, the property of John C. Singleton, esq., well known for its fattening properties.

Description.—Gray sand, composed of chert, quartz, comminuted shells (chiefly bivalve and Cerithium reticulatum (?), &c.), and spines of Echinus. The mass was held together by a small quantity of fine hydrated silty mud derived from the denudation of limestone (which is the local rock), and very rich in vegetable and animal matter derived from microscopical organisms.

At the Aughinish side of the bay, there is a bed owned by Mr. James Hynes, the ground of which is very similar.

20. *Burren, county of Clare.*—Sample of experimental bed of Mr. Henry O'Connell, of Limerick, which has been successful to a certain extent.

Description.—A sand composed of comminuted shells, forms of Cerithium, apparently C. reticulatum, spines of Echinus, young bivalve shells, apparently Cardium edule, held together by a fine highly hydrated silty mud, rich in animal matter. The Cerithium formed the greater part of the mass; the mud was not at all so abundant as in No. 18.

21 and 22. *Traroe, Burren, county of Clare.*—Two samples from the part of the Bay from Traroe to Mucknish, upon which are the fattening oyster beds of Mr. Michael Hynes, Mr. Michael Curtin, and Mr. Fergus Curtin. The samples are so much alike that the one description will answer for both.

Description.—Coarse coral sand—partly cemented together by calc sinter—small univalve shells, fragments of bivalves, spines of Echinus, and limestone pebbles covered with Litosiphon pusilus.

The celebrated Poldoody Beds are further in-shore, near Bell Harbour.

23. *Ballyvaughan, county of Clare.*—Sample of bottom of oyster beds belonging to the representatives of the late James Hickey, esq.

Description.—Fine quartzose beach sand, intermixed with abundance of comminuted shells, a few pebbles of red grits, fragments of oyster shells, and a little hydrated silt abounding in animal matter. The mass was black in the centre when not exposed to air and sunshine. The beds of Curranroe, Burren, and Ballyvaughan are all fattening beds, the young oysters for stocking them being brought from the Law Life Assurance Company's oyster beds at Rossmuck, near Ballinahinch, and Berturbay in Galway, and Westport in Mayo.

24. *Besborough, Knock, north shore of Estuary of Shannon, county of Clare.*

a. Mud from the fattening bed of Mr. R. W. C. Reeves, where the oysters become green-bearded.

Description.—Rich dark blue clay marl, drying dark whitish gray, containing scarcely any quartzose sand, but full of fragments of marine plants. Not a trace of copper could be detected in this mud. Mr. Reeves says that a green weed grows on the mud, but that he does not think the colour of the beard is due to it. He also says that the Poldoody oyster is green-bearded; and that the soil is the same as that just described, but that the water is deep, and the oysters never exposed, even at low water of spring tides.

b. Mud taken from the river out from the shore where trials had been made with hurdles and flags as spat collectors.

Description.—Blackish blue very unctuous rich clay marl, oxydizing yellow.

These muds contained Diatomaceæ (some of the forms being fresh-water ones), Foraminifera, &c.

25. *Carrig Island, in the Estuary of the Shannon, near Ballylongford,*

county of Kerry.—Sample of soil of enclosed pond or tank constructed by Charles Saunders, esq. This mud appears to represent also the soil of the fattening beds at the outer end of the island.

Description.—Unctuous highly hydrated blackish-brown silty clay, free from pebbles, but full of minute fragments of grits and gritty shales. The mud did not effervesce. It is apparently derived from the calcareous and other shales of the Coal Measures.

26. *Carrig Island, southern shore of the Estuary of the Shannon, near Ballylongford, county of Kerry.*—Sample of the mud now deposited in the tank, after a quantity of the old bottom had been thrown up on the bank. This tank has been hitherto a failure, but apparently from causes not connected with the soil.

Description.—Blackish-blue or grayish mud, drying hard, and breaking into fragments like some kinds of shale-clay. It did not effervesce, and contained very little animal matter. It is only a somewhat more sandy variety of No. 23, and, like it, full of fragments of plants.

27. *Valentia, county of Kerry.*—Sample of the soil of the Knight of Kerry's oyster ground.

Description.—Blue and greenish clay-slate debris, with fragments of red grits imbedded in a clay mud of a dark colour, which became very black in the interior when kept moist, and air and light excluded. There was also a great abundance of Cerithium reticulatum, Cardium edule, a species of Cœcum, a species of Astarte, Buccinum undatum, Adeorbis subcarinatus, a species of Trochus, probably T. cinerarius. The gravel was rather abundant, and was derived from the local rocks—Silurian slates and sandstones. This soil resembled in many ways the mud of Auray (No. 1).

28. *Sneem, Kenmare River, county of Kerry.*—Sample of soil from an oyster pond of about one statute acre in area, belonging to Mr. Bland. This pond has proved a failure.

Description.—A mass of finely comminuted bivalve shells intermixed with some yellowish fine mud, consisting of fine silt and extremely fine quartz sand. The mud was highly hydrated and contained some animal matter, so that the mass blackened slightly here and there wherever there was any mud. The mud freed from the shells did not effervesce. The rocks of the district consist of Silurian slates and grits, and Carboniferous limestone.

29. *Foaty Island, Cork Harbour.*—Sample of mud from the oyster bed of A. H. Smith Barry, esq., M.P.

Description.—Fine plastic dark-blue clay marl, containing some red grit pebbles coated with Confervæ, and comminuted oyster shells. The interior of the moist mass was of a most intense black. When exposed to air and light it rapidly oxydized and became of a rusty colour. This mud abounded in microscopic animal matter, Diatomaceæ, &c., and was one of the most unctuous of all the muds examined. The quantity of carbonate of lime in it made it, however, sufficiently porous. This mud is derived from the denudation of Silurian grits, and shales, and Carboniferous limestone. It is also, no doubt, affected by the sewage of the city of Cork.

30. *Tramore, county of Waterford.*—Sample of soil of Mr. Malcolmson's ponds.

Description.—Brownish yellow sands and gravel, consisting of fragments of local rocks (slates, grits, felstones, greenstones, and limestone of the Cambro-Silurian or Lower Silurian formation), intermixed with a little clay. This clay was not flocculent, and contained scarcely any organic matter; indeed, with the exception of a periwinkle shell and some fragments of other shells, there was no evidence of animal life in the soil.

31. *Tramore.*—Mr. E. Power's oyster beds and tank at Kilmacleague. Sample (No. 1, Beach Park) of the bottom of the first parc (park) or bed formed by Edmund Power, esq., several years ago, out of the beach, as at Isle Ré, for breeding on fascines. It failed as a breeding parc, though oysters improve somewhat in it.

Description.—Stiff yellow clay containing pebbles of the local Lower Silurian grits, slates, felstones, greenstones, and limestones, and with streaks of brownish manganiferous ferric hydrate through it, deposited by the water as the specimen dried. Here and there the clay was light coloured—the iron having been reduced from the state of ferric compounds to ferrous, and dissolved out. When air and light were excluded the interior of the moist mass blackened somewhat. The clay contained very little organic matter however.

32. *Tramore.*—Mr. E. Power's oyster beds and tank at Kilmacleague. Sample (No. 2, Wark's Gap) of bottom of natural pond where there is a large quantity of fresh water and consequently much mud. Oysters improve more in this mud than on any other part of Mr. E. Power's licensed grounds. He believes the oysters spawn, but that the spat is carried away by currents and lost in the mud.

Description.—Fine beach sand of quartz, felstone, and other local rocks, intermixed with a small quantity of very fine silty mud, which blackened when air and light were excluded from the moist mass. The mass also contained Confervæ in abundance, tubes of agglutinated sand formed by Annelides (Hermellæ), and comminuted periwinkles.

33. *Tramore.*—Sample of soil from the bottom of one of the tanks formed inside Mr. E. Power's embankment. The experiment with these tanks failed.

Description.—Coarse gravel of local rocks (slates, grits, vein quartz, felstone, &c.) with a little intermixed sandy clay and fragments of shells. The clay was not flocculent, and did not contain much organic matter. It blackened, however, here and there when air and light were excluded from the moist mass.

From the preceding descriptions, as well as from the nature of the local rocks in the neighbourhood of prolific natural oyster beds, it is evident that oyster cultivation may thrive upon shores and sea bottoms formed of granitoid rocks, schistose rocks, clay-slate, grits, shales, sandstones, limestone, chalk, clays—in fact, of rocks of all kinds. Consequently so far as the nature of the rock is concerned, oysters may be cultivated on any part of the Irish coast. Again, that while the gravel, sand, and clay of the sea-shore are, as a rule, formed from local rocks, in some places, as along the coasts of Wexford and Wicklow, they are derived from drift gravel, a good deal of which has been formed by the denudation of existing local rocks, but part also from limestone and other rocks not now found on the coast, or only here and there. In some places the sands and gravels derived from local rocks may be so covered over by deposits of coral sand or comminuted shells as to have no influence on the actual soil of the oyster ground, as is the case on parts of the west coast of Ireland (see descriptions of Nos. 16 and 17, p. 172). It further appears that the soil of all places successful as fattening stations contains more or less of a fine flocculent highly hydrated silty clay, abounding in vegetable and animal matter derived chiefly from Diatomacea, Rhizopoda, and other microscopical organisms; and that the soils of those places which have proved successful as breeding stations always contain some of it, but not necessarily as much as those which fatten; and lastly, that in those places which have proved failures, this peculiar kind of mud is either wholly absent, or inferior in quality and quantity.

In conclusion, I may sum up briefly the principal conclusions to which the study of the soil of oyster grounds has led me.

1. That the influence of the soil upon the breeding and growth of oysters is complicated by : temperature, especially during the spawning season ; sudden alternations of heat and cold, due to currents ; alternation of depth of water, especially as regards whether the maximum of sun-heat and light concords with low water during the spawning season ; velocity of tide, angle of inclination of shore, &c.
2. That the soil of oyster ground may be made up of materials of any of the great classes of rocks, arenaceous, argillaceous, or calcareous, provided they contain—
3. More or less of a fine flocculent highly hydrated silt, rich in organic matter, which indicates that Diatomacea, Rhizopoda, Infusoria, and other minute creatures abound.
4. That the character and abundance of such small organisms in a locality seems to be the true test of a successful oyster ground.
5. And lastly, that although oysters do undoubtedly assimilate copper from water where mine-water containing traces of that metal flow into the sea in the neighbourhood of the oyster beds, the copper is chiefly, if not exclusively, confined to the body of the oyster, and does not appear to reach the mantle or beard. That the so-called green oysters of Essex, Marennes, and other places, on the other hand, are green-bearded and contain no copper, nor can the most minute trace of copper be detected in the soil of the oyster grounds where such green-bearded oysters are produced.

APPENDIX I.

Royal Commission Irish Oyster Fisheries—12*th May*, 1869.

Queries.

1. Are there any, and if so, what description of oyster beds in this division ?
2. Where are the natural public beds situated ?
3. Are there any, and if so, what regulations enforced for throwing back undersized oysters, or otherwise protecting the beds ? and are any means adopted to re-stock the public beds ?
4. How many boats on an average in the year dredge on these public beds—distinguishing the number of smacks and row boats ?
5. How many men in each boat or smack ?
6. How many dredges ?
7. Is dredging carried on all the year round; and if not during what months do the fishermen generally dredge ?
8. What is the nature of the directions you received with regard to the observance of close time, &c. ?
9. When does close time commence and terminate in your locality ?
10. Are the public beds in a declining or prosperous state ? If the former, when did the decline commence ?
11. What, in your opinion, is the cause of the decline ?
12. Are there any oyster grounds in your locality used only for fattening purposes ? If so, state where situated ?

13. What *private* beds are in your district—distinguishing those that are natural and artificial?

14. State situation of each private bed, and the names and addresses of the owners.

15. Are there any, and if so, what means adopted to stock the *private* natural beds?

16. Are there any natural beds in the neighbourhood of the artificial ones?

17. State the nature of the artificial cultivation—whether on the foreshore or below it, and about the area actually taken up with artificial cultivation?

18. If the artificial cultivation has not proved successful, to what is it generally attributed?

19. What private beds have been formed in your district? Give names and addresses of owners, and locality of each bed?

20. Any general observations.

To be returned with Replies to the Commissioners of Irish Oyster Fisheries, Dublin.

APPENDIX K.

Extract from the Commissioners' Report.

"III. Reviewing the oyster fisheries which have been thus briefly described under these two heads, it will be seen that the difference of the systems pursued in them consists firstly, in the maintenance of a close-season; secondly, in a restriction as to the size of the oysters permitted to be taken.

"With respect to both of these points, in the estuary of the Thames the witnesses examined by us all agree in deprecating any interference by legislation; they maintain that no benefit would result from such measures to the public grounds, while the private grounds would be all but ruined, and that the average supply of oysters to the market would be greatly diminished; and though their grounds have been without any spat for some years they do not attribute this in any way to over-dredging, but solely to natural causes over which they have as yet no control. They confidently expect that when a favourable season recurs their grounds will again be supplied with brood.

"On the other hand, the local fishermen who dredge the beds in shallow water and in bays on all other parts of the coast are, with few exceptions, in favour of the maintenance of a close-season; they are also opposed to the taking of small oysters for the purpose of laying them down on beds distant from their own neighbourhood, though they are not generally opposed to moving them for the purpose of laying them down on beds of their own.

"IV. We may now proceed to discuss these questions in detail.

"We conceive it to be satisfactorily proved that any interference with the working of the private oyster beds during the close-time would be highly injurious. It is conclusively shown that it is only by very careful working and superintendence that the injury resulting from the deposit of mud and the growth of weeds can be repaired, and that the destruction of the oysters on the great scale by inroads of mussels which choke them, or of five-fingers which devour them, can be prevented. Some of the evidence which has been laid before us in these heads is worthy of the most careful attention.

"58,397. Do the mussels on the ground interfere with the oysters?—If we got mussels among the oysters, they would very soon smother them.

"58,617. Do you agree with Mr. Nichols, that if the spat were left on the flats it would never arrive at maturity, but would be strangled by the five-fingers?—Yes, I am very strongly of that opinion, and we have had it proved.

"58,618. What ground have you for thinking so?—That has been the case when any of the spat has been left there. In 1860, when we had our last spat, some portion of it was left there in the winter time, when we could not go to work upon it, because if we had taken it away and laid it upon our grounds it would have been killed by the frost; we therefore left it lying upon the flats, and when we went for the purpose of taking it in the spring of the year following, we found that it had all been destroyed by five-fingers.

"58,619. Did you upon that occasion find many five-fingers upon the ground?—Yes, they came in like swarms of bees, completely filling the ground in a day. I never saw anything like it; we saw all the water filled with them.

"61,561. I should like now, with your permission, to say a few words with regard to the necessity of maintaining a close-season. I think there can be no question of this, that if the close-season were enforced upon the Whitstable ground it would ruin the fishery altogether. There is no question at all about that. I quite agree with what Mr. Smith said, namely, that the ground upon which freshets are constantly coming and bringing sullage with them require to be continuously cleaned. Then again a heavy gale of wind will come on, and roll up the oysters in a ridge three feet deep. Great injury would be done to the oysters unless they were worked, and by working them in the course of a day or two they would all be spread over again. When they are spread the mud all goes away, but if they were left on that ridge the mud would settle all round them and kill them very rapidly. In the next place, that ridge, if allowed to remain, would cause an eddy and a fresh deposit of mud all round it for many yards. In the next place, it is just at that time of year that we want to work on account of the five-fingers coming upon the beds. They come like a flock of gulls, and unless they were well dredged they would soon destroy the spat. There is one kind that will eat an oyster itself; yet it is a singular thing with regard to them that after they have been dredged for a time they roll themselves up and float away. So much is that the case that in places where the fishermen have caught ten bushels of five-fingers one day they will go out the next day and not catch one. If during the close months the fishermen were unable to dredge, of course it would follow that the five-fingers would soon clear the oysters off the beds. To show the advantage of working the beds in the summer time, I may say that about four years ago, some time after the great spat in 1858, the Whitstable Company, when the oysters came, wanted more ground. There was a piece of ground about half a mile in extent lying on the east side of the regular ground, which had not been worked by the company, because they thought it was useless to work it. Well, they took it into their heads to work upon it and clean it, and it was said last year by two of the jury that since the time they had cleaned it they had sold off that piece of ground alone more than 150,000 bushels of oysters. Indeed that ground now is one of the best pieces of ground they have, and upon that half mile they lay their brood."

"It is impossible to study this evidence without being struck by the great complexity of the conditions upon which the prosperity of an oyster bed depends, even if we look at the action and interaction of mussels and starfish alone, without considering any other of the numerous active and passive enemies of the oyster. Nor is it possible to be other than impressed by the necessity of extreme caution in concluding that any observed increase or diminution in the supply of oysters has arisen from any one cause.

"The consideration of such facts as those here detailed leads us to attach very great weight to the opinion expressed by many competent witnesses, that the enforcement of a close-time in the open grounds is not only unnecessary but may be positively injurious, by allowing the accumulation of mud and weeds, and by permitting the five-fingers to commit their ravages without check. At the same time it can hardly be admitted that open-sea oyster beds must perish if not dredged, as some of the witnesses maintained. How could the beds ever grow to a sufficient size to be worth dredging if their very existence depended upon their being dredged?

"In favour of the existing system of close-time it is urged:

a. That during close-time the oysters are unfit for food.

b. That dredging over the beds will crush and destroy the young spat.

c. That if the oysters are taken while breeding the supply must soon come to an end.

"But to all these allegations very forcible replies are given:

a. It is generally agreed that not more than 20 per cent. or thereabouts of the oysters are ever spawning at once, at least 80 per cent. even at the worst of times being eatable and in good condition. The celebrated naturalist, Kröyer, who undertook an official examination of the Danish oyster beds, found not more than one oyster in ten spatting, even in July and August.

b. Those who have been in the habit of dredging for marine animals, and of bringing up the most delicately-organized creatures in great abundance alive, will not be disposed to attach much weight to this objection. Every naturalist is aware that the most delicate Corallines and Ascidians may be dredged up roughly, placed in a bucket of sea water, and examined in full health and vigour after an hour's sail homeward under such circumstances.

"The evidence of practical oyster cultivators whom we have examined on this point is worthy of careful attention.

"According to the opinions expressed by this and other witnesses, not only is no harm done by dredging over the young spat, but positive injury is the result of not dredging over the ground before the spat is deposited.

"But it is rare for the spatting to take place early in May, and if it does, as the young oysters swim about for 22 to 27 days, dredging over the beds cannot possibly do them harm for the greater part, if not the whole month of May; while if, as is more usual, the spatting does not occur until June, July, or even August or September, not only may dredging during these months be totally innocuous to the spat on account of its not having settled; but, on the theory that dredging over the spat is injurious, great damage may be done in the two first of the open months.

"Even admitting a certain amount of destruction from dredging over the spat, the question arises whether this destruction is likely to be greater than that which will result from leaving the oyster to the undisputed sway of mussels, star-fishes, weeds, and mud? This is a question which can only be decided by experience. In the present state of our information it can only be said that legislative interference is just as likely to do harm as good; and that so far as the present close-time is concerned, dredging in May must certainly have less effect upon the brood than dredging in September."

APPENDIX L.

TO THE INSPECTOR-GENERAL OF FISHERIES IN FRANCE.

Sir,—I have the honour to acknowledge the receipt of your letter of the 27th June.

In my last letter, of the 27th June, I had the honour of showing you compendiously the state of the oyster culture in the basins of Arcachon, and I explained to you the difficulties I experienced in collecting the necessary information. My journey to Bordeaux to vote at the Plebiscite, the repairs required by the vessel, and the works urgently required to be done on the beds at this time of the year, prevented me seeing the *parqueurs*, to converse with them, to revisit their beds—in a word, to study the question of the artificial reproduction of oysters in the basin of Arcachon in a complete manner.

I cannot to-day enter into the large details or give the necessary

figures. It is, however, possible for me to show the great traits of the position of the beds of Arcachon at this moment; this rapid sketch will suffice, sir, to make you appreciate the actual state and the brilliant future that will repay the intelligent work of the parkers.

On the 6th April I took the command of the "Sylphe." My predecessor, M. Le Commandant Marchand, explained to me the manner of cultivating the parks, trials attempted, sudden disasters, &c. He showed me the Imperial Parks, the ponds in process of construction, &c.

From the first moment I understood the importance of this culture I was astounded at the greatness of the idea, at its happy application, and from that day I vowed to develop it, and to spread it. It is under your high direction, sir, that I have taken the first steps; you have been good enough to give me the benefit of your experience; I, on my part have worked, reflected, consulted the oldest fishermen of the basin; each day my task appeared greater, and more useful.

What is it in effect? To put under cultivation the earth that the low water leaves uncovered, and to spread ease in the midst of a poor population of fishermen and sailors, who are the born servants of the state—women and children can work on the beds, a largely remunerative work.

The 1,000 tiles covered with hydraulic lime, put in their place on the beds, cost £3 12*s.* 6*d.*; it will be necessary also to clean the park, and get rid of crabs and *bigorneaux perceurs*, to get the tiles removed to the ponds when the winter sets in, and later on to detach the young brood; a continuous work is necessary to keep the beds in a good state, but at the end of the year what will be the worth of the 1,000 tiles? If there has been a good spat, they will be worth from one to two thousand francs. This is the price I saw paid to two fishermen at Arcachon for their oysters. What were then the expenses? I will inform you. There are about 120 days' work each year, which represents from 200 to 250 francs; the parkers will then have an easy and immediate return. Before these magnificent results, obtained at little cost, everybody is prepared to work. Last year about 500,000 tiles were put in the basin, this year there are at least two millions extra; 300,000 at Meitros, 720,000 at Arcachon. I am not certain of the number of people employed at La Teste, Arès, Audenge, &c., &c.; however, I am certain from having seen it, that there are a very large number, each one following his inclination and his means to march with enthusiasm in the new path, worked to increase his trade; great and small are rivals with ardour. Here one finds Monsieur Bethurius, the large proprietor, who puts down 150,000 tiles on his parks, there is seen the poor fisherman who puts down his few hundred tiles on his small bed. All then have understood the use and the great advantages of this culture; but whence comes this knowledge? It is without doubt from the establishment of the Imperial Parks that they derive it. They are in fact model parks in which the best methods of culture are sought out, studied, perfected, and then made common. They preach with example what is without contradiction a sort of eloquence in the grasp of all. The most ordinary men, from the facts that pass under their eyes, hurry to imitate us. What can say more, or be so convincing as these figures? 1,300 tiles placed on the beds of L'Ahilon in June last (1869), from which the spat was detached in April, produced a million oysters from three to five and six centimetres. I will have the honour to inform you in my next letter to what size these oysters have arrived.

These Imperial Parks have fulfilled to the utmost their rôle of model farm, they have supplied oysters to necessitous *parqueurs*, sold them to

those richer, who undertake the culture of oysters on a larger scale. Such is the importance of these model farms, that I had the honour of proposing to you, sir, in one of my previous letters, that a return should be published each year of the works done on the Imperial Parks, of the methods employed, and the results obtained. Many people in effect have asked me for information and advice. I have received letters from parkers at Auray, La Trinité, the River Crach, from England, Holland, and Belgium, asking for advice.

This rôle is then of use, it is well marked out, well filled under the inspiration of your high abilities, and your great experience. It is necessary to continue in that way, and especially to work in the Basin of Arcachon. A few words will suffice to show that it is *there* especially that the Imperial Parks should be kept and cultivated with care.

At low tide the basin offers a great abundance of banks of mud, or gravel, or shells, separated by narrow but deep channels. What comes to pass at the spatting time, when the tide rises? The oyster that was lowest on the bed, dry from one to two hours, will open as soon as it feels the pleasant freshness of the waves, it will send forth its spat, the current will carry them on and will place them on these beds covered with shells, and collectors placed there by the hand of man; for the pass is narrow, and the basin is large; but when the tide is full in, it divides in several branches, it flows then more slowly, and with far less violence, the waves are broken and the water is less agitated. The microscopic oyster will then have every chance of attaching itself to a shell or a tile placed in the vicinity, whilst in open bays the troubled waters will not allow it to rest on any fixed point, and many are lost in this manner.

The Basin of Arcachon we see is then admirably constructed by nature to serve as a nursery for the growth of oysters, to produce millions, then to spread them on the coast of France, or to sell them to other nations. Your great experience, sir, had well understood the importance of this point, and time has justified your choice and labour. Still, some years of patience, of work, and of foresight, and we will have arrived at a splendid result.

Last year 18,000 tiles were placed on the Imperial beds, this year I put down 68,000. The 1,300 tiles at Arcachon produced a million of oysters; if the harvest of 1870 be as good as that of 1869, we will collect from four to five millions of oysters. Monday last, the 27th June, I saw* on the greater part of the tiles, by tens, twenties, and thirties; on several I even counted as many as fifty. In some days I will be able to say how many oysters we may expect this year.

It will not be as great as I would have expected, but the *vote du plebiscite* at Bordeaux, and the mending of the vessel, kept me from Arcachon during the month of May; then again, I have been short of hands, and considering the number of tiles that had to be put down, I was obliged to commence to place the collectors on the 15th of May. The tiles, although I took the precaution to place them where they would be well washed by the current, are a little soiled by the deposit of mud, and do not give the same return as those put down in the beginning of June, and even from the 12th to the 21st June. But I had a great number of *appareils* to put down; this year, on account of the unaccustomed heat, promised to be exceptional; I had not sufficient money to hire labourers, so I had to act as I did.

We have this year unusual expenses to go to, viz., two large boats for

* Number left out in original.

the service of the parks, one of them for the purpose of carrying tiles, wood, lime, &c., &c., the other a light boat for the watching of the beds, and to chase poachers, &c.; they will cost about £24; 55,000 tiles, together with wood, and iron wire, necessary for the erection of stacks of tiles—lime (£24), wood and stakes, wicker, broom, for the large ponds on Crastorbe; shovels, picks, hatchets, skates, coal-tar, straw-hats, baskets, knives for detaching, different tools, &c., &c. If we wish to reap the price of our labours, the same sum of 10,000 francs will be necessary for the year 1871. If I ask for the same sum, it is because I will require a second lot of tiles, in order to be free to detach the spat later on in the year, so as not to be compelled to do this in a hurry, to put the old tiles back again on the beds, and consequently to do it more slowly and more carefully, and to injure fewer oysters, then to pick out the injured oysters, to construct boxes, covered with wire gauze, and to place them inside to heal.

On these conditions what can we hope for? In 1870, four to five millions of oysters, let us only say three millions. In 1871 at least as many. The beds have to-day five millions, this will be at least twelve millions in 1872, and the beds will be self-supporting, at least they will cost very much less, possessing already the tiles. To come to the help of the small *parqueurs*, and to sell a part of the product for the profit of the Treasury.

Such are, sir, the actual state of things, and the results that a wise and prudent administration of the Imperial Parks will bring about.

I dare not, having that object in view, sell any oysters this year, or at least if any were sold, they should only be a very small quantity, until the beds were thickly enough sown to be able to furnish a production *normal and regular*.

I have the honour to be, sir,

Your most obedient servant,

A. De Rochebrune.

Report of the Commandant of the steam vessel, the "Sylphe," to M. Coste, Inspector-General of Fisheries.

Arcachon,
On board the "Sylphe,"
16th September, 1870.

I returned to Arcachon on the 12th of this month, and on the same day I visited L'Ahilon.

The spat last year was good, but this year it is splendid—I then visited several parks and conversed with the parkers; all are delighted at the results obtained. *There are oysters in abundance everywhere.* The *gardes maritimes*, and the Inspector of Fisheries have both confirmed me in this statement. Never was there ever such a sight seen in the basin. The old residents here say that not since 1859 has there been a similar abundance, but at that time they had not such an important number of collectors (at the lowest calculation two millions of tiles), as were put down this year; this is the reason I can state for saying that *never* has there been such a harvest. It is a very *manna*, sent down from heaven, which ought to guarantee the prosperity of the basin for ever, if the parkers know how to be prudent. There has already been some outlay—work for women and children—the future will be still better, and will give comfort to the people of Arcachon. I cannot as

yet say what amount of young brood there is, but I will give a modest approximation which will certainly be under the truth. However, I give you the figures, sir, and will leave you to judge. There are, *at the lowest computation*, two millions of tiles; I believe there are more, but I will take this amount. I take on an average twenty-five oysters per tile (all those I examined had fully that amount, and I even do not take into account all that the parkers state that there are). We then have *fifty* millions of young oysters on the collectors. The shells of the cockles thrown on the natural beds, have also collected the spat. In certain places, on Le Cès, for example, the oysters are in bunches of four and five. I will put down, however, this quantity of spat at a less figure than that on the tiles—about thirty millions, and I can state without fear of exaggeration, that there are at least *eighty millions* of young oysters, perhaps more, even from 100 to 150 millions. The visit to the parks and natural beds next month will enable me to give you more exact information. In a word, sir, our parks all present a beautiful and interesting sight. The pilot of Marennes, who accompanied me here, and who knows all the works of this description undertaken at Oleron and along the coast, was perfectly amazed at such results. *He saw and was convinced.* Incredibility has become enthusiasm. I would much wish that events would permit you coming here, sir, to judge for yourself what our works have produced. They are the result of your observations, and your long and patient labours have to-day been crowned with the most brilliant success. All you predicted is realized. The basin of Arcachon is constructed by nature to reap the spat of the oyster. I beg you will excuse the unconnectedness of this report. I am writing in a hurry, under the impression of what I have seen in the last few days. *I saw in haste, but I am positive I saw well*, and that I am *below* the truth.

(Signed) De Rochebrune,
Captain of the Steam Vessel
the "Sylphe," at Arcachon.

Report to the Inspector-General of Fisheries, on the situation of the Imperial Park of the Basin of Arcachon. By M. Marchand, Captain of the *Sylphe*.

General Conditions.

The Imperial Parks have been kept up and managed by a special grant of £140.

The expenses consist in the purchase of cockles, shells, tiles, hydraulic lime, boats for the transport of materials, people, planks for tiles, shovels, different tools, spars for beacons, hatchets, nails, &c., and various things required for the parks.

We placed 20,000 tiles covered with a coating of water lime, in ruches of 45 tiles each, forming about 444 ruches, all resting on a deal flooring We have ascertained that there are on an average 100 spat per tile; 150 *cubic* yards of shells have been scattered about over the different parks, and the show of spat there is remarkably good. The old shells and the shells of live oysters are covered with spat, we cannot actually fix the number, but there is a very fine production.

Establishment of Claires.

The determination to construct claires for tiles covered with spat is excellent, and in time will prove very beneficial; it is a very good plan,

the young oysters will thus be protected from the ravages of parasites, and the inclemency of the weather.

The tables with fascines have a large quantity of spat on them, but on the 2,000 fascines there are not so many, owing to the great heat. The drainage pipes that form the boundary of L'Ahilon have all spat on them.

Loss owing to the great heat.

This loss will be recovered; the spatting of part of the oysters, at a time when the weather was warm and fine, has tended to cover the old oyster shells, the cultch, and the large oysters, in an extraordinary manner. The rubble of L'Ahilon has very little spat except on the lower part of the blocks.

Tempest of the 20th and 21st September.

The tempest of the 20th and 21st September has cleaned the parks, washed away the mud and the seaweeds, but the parks of Cès and L'Ahilon lost many oysters which were thrown upon the neighbouring foreshores and into the channels, they will be found later on in the public fishing. It is a description of forced sowing.

Park du Ces.

The park of Cès is in a good state of natural reproduction, which is shown most on the cockle shells; we owe this result to the great care which has been bestowed on it, in management, and in keeping it clean. The spat on 5,000 tiles there is superb. This park will have to be rendered "healthy," as it were, by means of channels cut with a fall, by having it raked, and by having the weeds taken away. The park of Cès has suffered by the great heat, and by the tempest of September, but it is a very reproductive and precious bed. In 1870 it will be necessary to put down 100 cubic yards of cockle shells, and 2,000 tiles.

Crastorbe.

A good park, well kept, sixty cubic yards of cockle shells were put down; the channels for the improvement of the park and to allow the water to run in work well. Natural reproduction is good. The cultch put down at a suitable time shows a good spat. Walking must be prevented on this park as the soil is very soft; people after ducks and *courtines* must be prevented from going on to it; even supposing that each person does not gather some oysters, the way in which they have to follow their calling destroys the young oysters, not only on Crastorbe, but especially on its borders, which are rich, and naturally derive benefit from the works and the spat on the park.

The watchfulness of the guards and of *la Goalette la Loubine* is very active and efficacious, but very fatiguing.

Claires de Crastorbe.

The claires ordered to be undertaken by the Minister of the Marine are in course of construction on the first hectare of the Sud and Crastorbe.

A special report with plans will be furnished, but it is best to wait until the works are completed, as there might have to be some modification of the original plan, considering the clayey and soft nature of the soil.

The oysters will be well preserved there, in shelter from mud, and all dead sea-weed. Two claires nearly finished answer already very well; the weeds and anything else that float towards the entrance of the water into the claires are all removed with rakes. The parkers will find here a subject for serious consideration.

L'Ahilon.

This park, established on the foreshore of L'Ahilon, is very well managed. The claires require mending, and the centre dyke should be filled up; 19,000 tiles covered with hydraulic lime have been placed there; a good spat has taken place; more than 100 oysters on each tile; the soil is excellent and covered with spat; many have fallen from off the tiles; at the time of the tempest of the 21st September the average was taken after this storm. The debris of tiles, the posts and drainage pipes, are all covered with spat. Thirty cubic yards of cultch were put on the bed; the spat was very abundant; the storm of September carried a portion of them into the channels. The thirty-two tables with fascines have some spat. The fascines themselves very few. L'Ahilon is specially fitted for the production of oysters, which grow with a remarkable rapidity here; the mud was an objection, but since its establishment as an Imperial Park the works that have been executed have made it a superior oyster park; there is not such another in the whole basin. The experiments in the time of putting up the hutches give the following results:

Date of erection.	Average of oysters per tile.
23 June,	106
10 July,	68
24 „	22
10 August,	33
23 „	22
Tides of September,	from 1 to 5
The 22nd of September, after the storm,	–
After,	–

The "Loubine" watches this park very zealously; the duty is very fatiguing considering the proximity of the small grants of oyster parks.

Use of the Imperial Parks.

For several years, the results obtained by the Imperial Parks have borne their fruit, many of the persons holding concessions having adopted the same methods of culture as those in use on the Imperial Parks.

This year more than 600,000 tiles coated with a preparation of hydraulic lime, have been placed in the basin, which have all received a good quantity of spat, with the exception of 8,000 tiles of the Syndicat du Trou du Sud, placed in a bad position.

According to the ground selected and the height of the collectors above the level of the low water mark, the other undertakings have obtained results varying from 35 to 100 spat per tile; for the different parks the average is about 75 oysters per tile; so the parkers say, and I think it must be very nearly exact.

Already sales have taken place between the cultivators and parkers, the oysters from the tiles of 1869 are quoted at £800 per million, these oysters, from their size, naturally will remain in the basin of Arcachon.

Cultivators.

The cultivators of oysters with tiles are not very well pleased with their position; they naturally desire to realize their profits as soon as possible, as their expenses are considerable. I think it would be desirable, even necessary, to give them permission to sell immediately a portion of their spat; by this means they would have the requisite funds and would be able to increase their operations, the future prosperity of the basin would be more quickly assured than by restrictive measures, and later on full

liberty of action for the sale of the product of their tiles, either detached from, or with the tiles, might be allowed them.

The surveillance would be very easily managed—the oyster grown on a tile, in a measure, preserves indelibly its mark of origin, the lower shell has a light flattened appearance near the hinge, and a small quantity of the lime, during at least two years (and that without giving the oyster an unsightly or unpleasant shape).

Useful Restriction.

But, as compensation, the deep sea oysters and the oysters from the cultch and shells, for the future, should not be allowed to be sold for the market or for export, until they had attained the size of seven centimetres.

The Imperial Parks, well managed, are the natural sources from which the basin will be restocked; they can support themselves.

The quantity of oysters sold to the Inscription Maritime has allowed of the productive foreshores being cultivated; they have been furnished with cultch to enable the necessary works to be done, so that thus the Imperial Parks contribute to their own maintenance by the sale of their oysters; the natural beds opposed to them, as producing as much per hectare as the others; this year the storms of September have given them a large quantity of their small oysters, and spat; as I mentioned before, it is to the Imperial Parks they owe this stock.

The 100,000 oysters from the imperial beds, sold to the Inscription Maritime was a lucky stroke for the purchasers, for during the interval between the buying of them in March and their being sold actually, they were covered with spat. Before selling other oysters, either to individuals or to the Inscription Maritime, it would be well to establish a minimum for the Imperial parks, about ten millions of oysters, which appears to be the normal amount during 1870. It would be disastrous for the future prosperity of the beds to even sell one of them later; on the contrary, by a regular sale, varying in extent according to the amount produced, the basin itself would not only be restocked, but would be capable of furnishing oysters to others.

I consider that the granting of oysters to individuals is bad, causing jealousy; for the most part, these gifts are turned into money, the persons to whom they have been given, selling them even before they get them themselves; we have often also seen complaints in regard to the good or bad appearance of the oysters.

Works to be undertaken in 1870.

To continue the ordinary methods of culture, shown by the experiences of many years, and the experiments that have proved successful in 1869.

Firstly.—To complete the claires of Crastorbe.

Secondly.—Remake the claires of L'Ahilon.

Thirdly.—To throw down the centre ditch of L'Ahilon.

Fourthly.—To spread cultch on Cès and Crastorbe. During the *mortes eaux* to prepare the collectors of all sorts, and to coat the tiles with hydraulic lime.

To purchase from 20,000 to 100,000 more tiles, and to suppress the tables with fascines as being too costly for the amount produced.

To place large fascines where they won't be left uncovered.

Here is what, for the first year, this increase in material would cost, afterwards we would only have to pay for the cultivating.

If the tiles off L'Ahilon had not been given away, we would now have 40,000, and our production for the year would be doubled.

	Francs.
1,000 tiles cost	60
Hydraulic lime for 1,000 tiles costs	6
The wood for 1,000 tiles costs	10
Thus the expense for 80,000 tiles,	4,800
Lime for 100,000 tiles,	600
For the *plateaux*,	1,000
About 200 cubic yards of cultch,	1,500
	7,900
Cost of working, purchase of nails, sprigs, skates, boats, tools, coal-tar, &c.,	2,500*
Total,	10,400
For the first year,	10,400
Cost for the future,	4,100

The older the tiles are, the better they can be coated with the lime, which thus becoming thicker, they are less liable to be broken than the new ones, which often arrive cracked; indeed the loss for breakage is put down at one per cent.

Supposing even that the spat for 1870 is only at the rate of fifty oysters per tile, that would amount to five millions of oysters, which, in the month of October of the same year, would be worth 100,000 francs, for six months only, that is, it would pay for the station and more than double the cost of the material for a year.

The stock and the cultch remaining as benefice.

In the event of these propositions meeting with your approval, the material should be purchased at the latest, towards the 15th of February, 1870, in order to have the necessary time for preparation.

It would also be as well to obtain officially from the administration of bridges and ways, or domains, a grant of about 1,000 metres of the island called "L'Ile aux Oiseaux," in order to be able to place our materials for cultivation on it; the thing exists at present on sufferance.

On board the *Sylphe*, the 14th December, 1869.

The Lieutenant of the vessel,

MARCHAND.

APPENDIX M.

SOCIETY for affording RELIEF to the SAILORS of CONCARNEAU.

RULES OF THE SOCIETY.

CHAPTER I.—*Formation of the Society—its aim—constitution.*

1. A society has been formed for affording relief to the sailors of the maritime circonscription of the sub-division of Concarneau.

2. This society will be called "A Society for affording Relief to the Sailors of Concarneau."

3. It will have for its object:—

1. To meet the pressing wants of the wives, children, fathers, mothers, brothers, sisters, orphans, and minors of sailors drowned at sea.
2. To assist sailors who by accident or loss at sea, are reduced to poverty.
3. To procure medical aid and medicine for sailors that have become sick at sea.

* According to the number of collectors.

4. Medical aid and medicine will be procured for the members of this society and their families, both at Concarneau and Laurioc, until the society has no resources wherewith to assist the whole circonscription maritime.

5. The society is composed of members participating, and honorary members.

6. The members participating are all the sailors in the quarter of Concarneau. They are admitted from sixteen years of age, and partake of the advantages of the society.

7. Honorary members are those who contribute to the prosperity of the society. Honorary members are admitted on their simply applying at the office of the society.

8. Honorary members do not participate in the advantages of the society.

9. Every sailor desirous of becoming a participating member, will be admitted without right of entrance during the two first years, after which, if he is over twenty-six years of age, he will pay a sum fixed by the council of administration.

Chapter II.—*Administration.*

10. The administration is composed of a president, elected by the Emperor, and fourteen members selected by the general assembly, half from the honorary members, and the others from the participating members, who will meet together to name their office.

11. The president watches over and assures the execution of the laws; he makes the return each year in conformity with the 20th article of the decree regulating relief societies.

The duties of the secretary are to attend to the correspondence, and to keep the archives.

The treasurer takes the receipts, and makes the payments of the society upon a visé by the president, or a member with powers for that purpose.

12. There is every year a general assembly, at which all the honorary members attend, and those of the participating members, as hold any office in the society.

At this meeting the report of the state of the society is read, and the members pronounce upon any questions submitted to them.

13. The council of administration meets whenever summoned by the president.

14. Half of the council of administration is elected anew each year.

Those with the majority of votes are elected.

Chapter III.—*Obligations of its Members.*

15. Each member shall, each year, at the close of the Sardine Fishery, pay as follows:—Skippers, 5 francs; men, 4 francs.

16. Fishermen that follow any other fishing, or who are engaged in trading as sailors, if they desire to partake of the advantages of the society, must pay the above mentioned sum at the same time.

17. Any sailors engaged in the navy, will, upon their return to their quarter, have to pay—if they wish to continue as members of the society—the same amount of money as was paid by the other members in their absence.

18. Honorary members will have to pay as a subscription to the society a sum not less than 5 francs.

Any member not paying his subscription will be declared as having resigned.

19. The subscriptions of honorary members will be paid to the treasurer in July of each year.

Chapter IV.—*Obligations of the Society to its Members.*

20. The council of administration will be called upon to decide the amount of money to be distributed as help, and that within the limits of the resources of the society.

21. Independently of the care stated in articles 3 and 4, participating members *alone*, will be allowed 1 franc a day whenever sickness will have prevented their working during four consecutive days. This payment will cease when the doctor thinks it no longer required.

22. Help in either money or kind can be equally given in certain cases, viz., in case of death or loss.

23. As soon as a participating member or one of his family is taken sick, or has met with an accident, he is to inform the doctor accordingly, as also the treasurer, who should immediately give the sick person a card with their name on it, upon which the name of the sickness, and the prescriptions given by the doctor should be written.

24. The doctors will be chosen by the administration, and their fees will be paid by subscription.

25. The administration will make arrangements with one or several apothecaries, for the furnishing of medicines, or with the doctor, if there be no apothecary in the locality.

26. No medicines at the expense of the society will be allowed to be delivered unless accompanied with a voucher signed by the doctor.

27. No help is allowed for sickness caused by debauchery or intemperance, nor for any injuries received by a member in a fight, when it is proved that he was the aggressor; nor for injuries received in public rows, in which he has voluntarily taken a part.

28. In case of death, indigent participating members will be buried at the expense of the society.

29. Every year a funeral service will be said for those dead. The administration and all the members will be invited to take part in this religious ceremony.

30. The president will name, according as the society requires it, a certain number of members, taken in turn from the roll of participating members, who shall be called "visitors," and whose duty it will be to see the sick, to watch that they receive exactly the help due to them, and to give them their own help if it is required by the sick persons or their families.

Chapter V.—*Social Funds, and their placing of Fund.*

31. The social fund is composed of:—

1. Subscriptions of members participating.
2. Subscriptions of members honorary.
3. Help of the State Department and Commune.
4. Gifts and private legacies.

32. When the funds of the society exceed 1,000 francs, the surplus will be placed in the reserve fund of Quimper.

33. Any change in the foregoing rules must be submitted to the administration before it becomes valid.

No change can take place without the majority of votes in the general assembly, and shall be approved by the Government.

Made at Concarneau, this 24th day of January, 1864.

The members of the council of administration—

(Signed,)

PENANROS DUPPONT, BALERTRIE, GUILLON, SAUBAN, BRISSON, HENU, QUELLENEC, GUILLIRME, SAUBAN.

The president of the society (signed), ALIX.

True copy—The president of the society,
(Signed), ALIX.

APPENDIX N.

INFORMATION relative to the OYSTER BREEDING ESTABLISHMENTS at ILE DE RE.

QUESTION.	ANSWER.
1. Number of ponds and fattening beds?	3,044 / 932 } 3,936
2. Extent in hectares?	202 hectares, 47 ares, 72 centares.
3. Number of owners of parks?	About 2,450.
4. Number of owners of fattening beds?	About 578.
5. Number of persons employed?	About 5,000.
6. Does the Government exact payment from, or does it impose conditions upon those obtaining grants?	The concessions are free and are capable of being revoked at any time and without any compensation being given?
7. What is the extent of the public or natural beds in the sea?	There are none at the Ile de Ré.
8. During how many days last year were the public or natural beds allowed to be dredged?	See Question No. 7.
9. During what months may oysters be dredged?	In the parks, from the 1st September to the 30th April following. In the fattening beds, during the whole year.
10. What was the quantity of oysters sold last year?	879,713.
11. What was the value of that quantity?	31,145 francs.
12. What quantity is there at present on the Island.	In the parks, 2,250,000 In the fattening ponds, 286,000 Total, 2,536,000
13. At what age is the young oyster transferred from the cultch to the beds?	A year after birth.

Question.	Answer.
14. When they are moved are they taken from their place of birth?	They are moved to places where they grow, fatten, and green. They are left where they were spatted if the ground is suitable.
15. What is about the loss incurred in moving them from the tiles?	It is insignificant, probably about 20 per cent.
16. At what age as a rule are the young oysters sold at the Ile de Ré.	At two years old they are sold for the market; at one year, they are sold to stock beds.

Years.	Number of Concessions made during so many years.	Number of Oysters Sold and Gathered.		Extent of Ground given each Year.	Extent of Ground under Cultivation each Year.
		Number of Oysters.	Amount in Francs.		
				hr. ar. c.	
1857	121	—	—	6 05 00	—
1858	444	—	—	22 20 00	—
1859	885	157,900	3,150	46 51 86	4 54 00
1860	843	401,350	8,027	44 48 86	7 90 50
1861	322	1,615,000	32,892	16 10 00	20 05 00
1862	439	2,780,740	53,000	21 95 00	27 04 00
1863	498	5,650,250	113,382	24 90 00	55 03 00
1864	298	2,376,440	45,456	14 90 00	30 50 50
1865	72	1,919,900	50,500	3 61 40	31 95 00
1866	3	1,181,000	37,912	13 60	25 00 00
1867	51	879,713	31,145	1 62 00	22 59 50
	3,976	16,961,893	375,464	202 47 72	—

APPENDIX O.

Whitstable Oyster Fishery.

Year.	Quantity of Brood obtained from the Flats.	Total Cost.	Average Cost per Wash.	Quantity of Brood obtained from Essex.	Total Cost.	Average Cost per Wash.	Grand Totals.	
							Quantities of Brood from Flats and Essex.	Total Cost.
	Wash.	£ s. d.	s. d.	Wash.	£ s. d.	s. d.	Wash.	£ s. d.
From July, 1852, to July, 1853.	–	–	–	–	–	–	63,853¾	15,240 0 5
1853–4,	–	–	–	–	–	–	55,937	16,200 4 0
1854–5,	3,018	905 8 1	6 0	41,083½	15,064 0 2	7 4	44,101½	15,969 8 3
1855–6,	–	–	–	–	–	–	30,004	10,322 8 11
1856–7,	11,040	3,000 3 10	5 6	29,664	8,250 1 8	5 6	40,704	11,250 5 6
1857–8,	36,070	6,914 13 7	3 10	41,774	14,142 10 8	6 9	77,844	21,057 4 3
1858–9,	49,319	8,574 17 7½	–	85,559½	20,136 2 7	–	134,878½	28,711 0 2½
1859–60,	48,058	8,319 7 9	–	35,423	11,519 13 4	–	83,481	19,839 1 1
1860–1,	11,851	2,761 4 11	–	37,858½	13,271 19 6	–	49,709½	16,033 4 5
1861–2,	5,134	1,520 15 7	–	79,803	35,192 6 1	–	84,937	36,713 1 8
1862–3,	2,419	828 17 11	–	20,080½	12,560 11 11½	–	22,499½	13,389 9 10½
1863–4,	2,398	Prices varying from 9*s.* to 16*s.*		12,836	Prices varying from 13*s.* 8*d.* to 16*s.*		15,234	14,553 19 2
1864 to March, 1865,	914	483 3 7	0 11	1,769½	1,462 5 3	17 0	2,683½	1,945 8 10
Do. .	–	–	–	2,500	2,625 0 0	21 0	2,500	2,625 0 0

Whitstable Oyster Company—*continued.*

Year.	Quantity of Oysters obtained from Ireland.	Quantity of Oysters from Scotland.	Quantity of Oysters from Falmouth, Jersey, Channel, and Hamble.	Total Cost of the same.	Value of Natives and Commons sold in London and Home Markets from August to May in each year.	Value of Natives sold in Foreign Markets.	Price paid for Labour from August each year to May in the next year.		Total Expenses for each year, from August in each year to May in the next year.
	Barrels.	Barrels.	Tubs.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.
1852,	None.	None.	11,645⅓				1852–3,	16,793 9 9	48,484 11 1
1853,	Do.	Do.	9,809	2,254 9 8	47,413 19 1	2,258 14 11	1853–4,	17,822 5 2	45,427 1 5½
1854,	Do.	Do.	–	2,115 7 7	31,700 16 8	–	1854–5,	14,154 15 0	45,994 1 11
1855,	Do.	Do.	–	–	31,449 12 10	–	1855–6,	14,166 11 6	36,715 9 3¾
1856,	Do.	Do.	–	–	28,995 19 7	–	1856–7,	14,131 8 8	42,335 13 4
1857,	Do.	Do.	–	2,261 19 10½	30,986 7 7	–	1857–8,	19,415 6 11	58,887 2 11½
1858,	Do.	Do.	–	3,803 8 10½	11,484 6 10½	985 10 0	1858–9,	20,445 13 9½	65,948 10 9½
1859,	Do.	Do.	–	3,543 17 4	51,588 2 7⅓	6,385 3 3	1859–60,	20,531 18 6	64,286 12 7½
1860,	Do.	Do.	–	1,586 11 2⅔	45,173 6 8½	4,441 15 0	1860–1,	16,713 4 4	45,745 1 6
1861,	Do.	Do.	–	2,135 3 11	22,117 1 10	11,429 3 6	1861–2,	27,641 18 9	74,354 18 1
1862,	Do.	Do.	–	5,473 6 7	58,911 12 7½	15,216 0 0	1862–3,	43,731 14 4	97,794 2 1
1863,	Do.	Do.	–	9,442 10 8	74,778 19 3½	25,556 19 10	1863–4,	46,609 10 8½	79,860 0 7½
1864,	2,654	2,858	1,183	4,917 7 8⅓	56,217 3 5	19,660 2 0			
1865,	1,933	1,009	–	1,422 12 0	Returns for this year not yet sent in.				

The above Returns show:—

1. The amount received by the Company for natives and commons included.
2. An account of the natives sold in the foreign markets.
3. The amount paid for labour on the ground.
4. The total expenses of the Company during each year.

A tub of oysters is about 26 gals. A barrel do. is about 28 do.

Prices of Native Oysters (Whitstable) from the year 1825 to 1870.

	Average price per Bushel for the year. £ s. d.		Average price per Bushel for the year. £ s. d.
From August, 1825, to May, 1826,	0 19 0	1846–7,	2 7 0
1826–7,	1 0 0	1847–8,	2 1 0
1827–8,	1 8 0	1848–9,	2 1 0
1828–9,	1 16 0	1849–50,	2 0 0
1829–30,	1 13 0	1850–1,	1 11 0
1830–1,	1 10 0	1851–2,	1 16 0
1831–2,	1 11 0	1852–3,	2 2 0
1832–3,	1 10 0	1853–4,	2 7 0
1833–4,	1 16 0	1854–5,	2 9 0
1834–5,	1 19 0	1855–6,	2 1 0
1835–6,	1 12 0	1856–7,	1 18 0
1836–7,	1 13 0	1857–8,	2 2 0
1837–8,	1 12 0	1858–9,	2 2 0
1838–9,	1 12 0	1859–60,	2 2 0
1839–40,	1 17 0	1860–1,	2 2 0
1840–1,	2 2 0	1861–2,	2 2 0
1841–2,	2 0 0	1862–3,	2 8 0
1842–3,	2 10 0	1863–4,	3 8 0
1843–4,	2 18 0	1864–5, Prices varied from 80s. to 90s.	4 10 0
1844–5,	3 0 0	1869–70,	10 2 0
1845–6,	2 18 0		

Dublin: Printed by Alexander Thom, 87 & 88, Abbey-street,
For Her Majesty's Stationery Office.

Plan of

THE ILE DE RHÈ

Shewing the Towns, Roads and Oyster Parcs.

ARS

LA COUARDE

LE GILLIEU

LE FAUCE DE LOIX

RIVEDOUX

FORT LAPRES

LA FLOTTE

ST MARTIN

LOIX

LES PORTES

Old Oyster Bed. (Fished out.)

Plate 2.

RIVERS ON WHICH THERE ARE OYSTER LAYINGS NEAR AURAY.

Forster & Cº Dublin

Plate 3.

PLAN

DU BASSIN D'ARCACHON

avec l'indication des Positions des Depots Permanents d'Huitres,

autorises par

S. E. LE MINISTRE DE LA MARINE.

Leve a Arcachon en 1860, par le Conducteur des Ponts et Chaussees.

Dmokowski.

Etat nominatif des concessionnaises des Depots permanants d'huitres autorises dans le bassin d'Arcachon.

No. des Depots.	Noms et Prénoms.
1	Boricant et Lesca.
2	Durand et Danty.
3	Vidal et Derls.
4	Balan et Moret.
5	Lafon, Ostinda.
6	L'aforceit Lussan.
7	Dignac Jn. et Lalanne.
8	Desbats et Castaing.
9	Dignac Jn. et Lesca.
10	Guibert et Lafond.
11	Faussecave et Mane.
12	Lalesque Osmin.
13	Castaing et Ducos.
14	Moureau Capn. au long cour
15	Luc et Dulan.
16	Dinan frau . et Jean.
17	Camelayre et Bexian.
18	Castaing, Dupuy, Beduchand
19	Lebrun, Pierre.
20	Laneau et fem Taffard.
21	Bourredon et Noze.
22	Dubourdien et de Thury.
23	Mesple et Duvergier.
24	Bandens Bertrand.
35	Douillard et Boissière,
26	Lalande et Bezian.
27	Cestac et Bœuf.
28	Desgans m'au cabotage.
29	Lagauzère frères.
30	Durand et Nanty.
31	Thenot et Rhonè.
32	Darman et Dupuy.
33	Cameleyre françois.
34	Lacon et de Toqueville.
35	Duverge et Lalesque ainé.
36	Bandens et Lalesque Jules
37	Bordelais et Hameau.
38	Labanne et Dubos.
39	Deicard et Gièse.
40	Dubos et Saffroy.
41	Bagney Michael.
42	Danvy et Dignac.
43	L'hotellerie et Desombres.
44	Pontac, Delis, et Castera.
45	Meen et Pauilloc.
46	Camelayre et de Marpont.
47	Ramondin et Taffard.
48	Daney et Deganne.
49	Noël et Hernozant.
50	Dehillotte et Broustan.
51	Monliet's Gerard et Daney.
52	Baillon et Dumeur.
53	Morin et Venot.
54	Bouscan Justin et Bouscand
55	Lany et Graves.
56	Lariole, Auyan, et V. Mano
57	Cestac et Lesca.
58	Dupuch et Taffard.
59	Lurie, Laland, Dumeur.
60	Dubernet et Eyquem.
61	Plantey, Cazaubon, Caussat
62	Nau et Teihonayre.
63	Martin et Duha.
64	Guilhem et Moreau.
65	Bettus Jean.
66	Dumora et Balesbe.
67	Boirie et Lagouzère.
68	Legall et Lacombe.
69	Meynard et Deisson.
70	Dessans et Mouliets.
71	Gaillardan et Mesple Cie.
72	Seguin et Mesple Pn.
73	Deissin, Malaycan, Sentout.
74	Sapte et Lanau.
75	Dubos et Moynes.
76	Coustan, Leston, Jn.
77	Baleste et Boyer.
78	Chasseloup, Castaing.
79	Bettus, Dubernet.
80	Ballagé Lre. et Bellangi, Bertd.
81	Lontac Jn. Bapte.
82	Dignac, Lre.
83	Ducamin Jean.
84	Bachellerio et Gerard.
85	Bacquey et Gautier.
86	Bidouze en Dasté.
87	Mouliets, Moyzes, Ramondin
88	Thomas Mln. et Bardon.
89	Martin Gerd. et Lannes.
90	Lalegrand et Simon Edouard
91	Daney et Camin Bardolin.
92	Dehillotte Jean et Antoine.
93	Lalande et Lestrade.
94	Lalanne et Lamarque.
95	Dulue et Moyrand.
96	Lestrille et Vigier.
97	Bellange et Mouliet.
98	Dumur et Daney.
99	Balesse et Picet.
100	Dubet, Lahaye, Destample.
101	Bouton, Duprat.
102	Grehanne et Bonnefemme.
103	Lagune et Persil.
104	Baleste et Moranza.
105	Castaing et Broustan.
106	Lemalle et Lalesque.
107	Maleyran et Gignoux.
108	Martin Jean et Garnung Jean.
109	Cénaa dit Carcau.
110	Ournon pierre Bernader et Deshayes.
111	Deisson et Bal.
112	Bouseau Pierre. Argilas et Labassa.
&c	&c &c

Forster & Co Lith. Dublin

G.W. Hart delt
Oct. 1868.

THE IMPERIAL PARC, LAHILLON, AT ARCACHON.

REPORT ON THE STATE OF THE OYSTER FISH

IMPERIAL PARK OF L'

N. E.

The Park is divided into 34 unequal squares.
1c. 1c. Pond containing 148,000 Oysters of the year 1869.
2c, 3c, 4c, 5c, 6c. Ponds in contemplation.
11, 12, containing 390,000 Oysters of 1869.
13, 14. Ponds with stacks of tiles for experiments.
R, R. Pond with stack of tiles.
F. Drain for the water to run in.

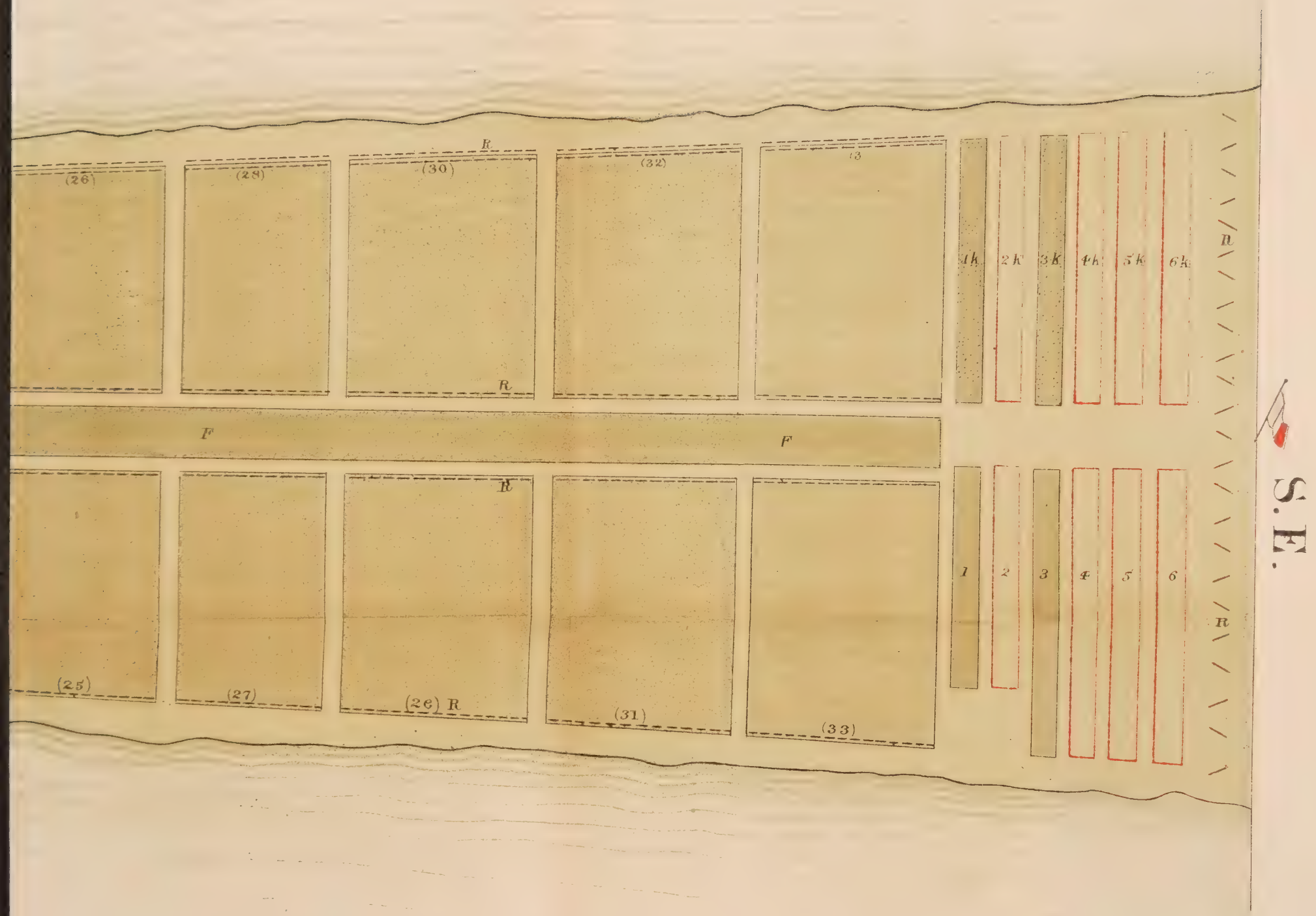
S. W.

Scale of 0^m 002 to 1^m 000. — Scale 1/50

ERIES.

APPENDIX
PLATE N° 5

AHILON

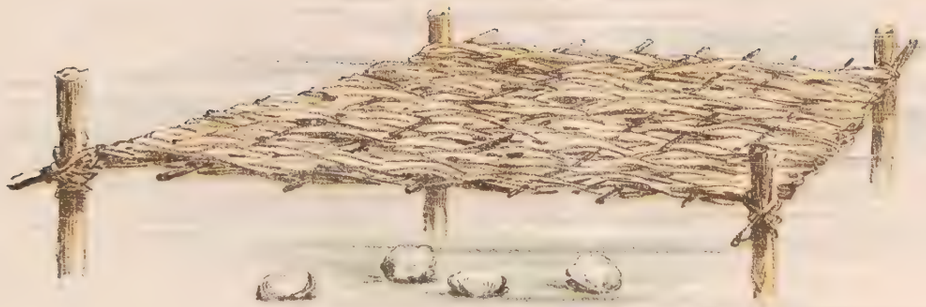


1 k. 3k. Contain 438,000. Oysters of 1869.

A. de. Rochebrune.

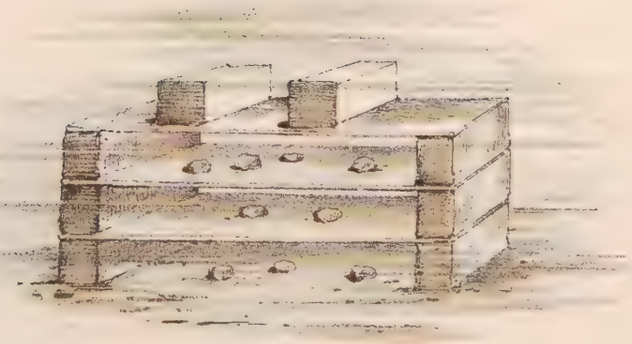
REPORT ON THE STATE OF THE OYSTER FISHERIES.

COLLECTORS AT HAYLING.

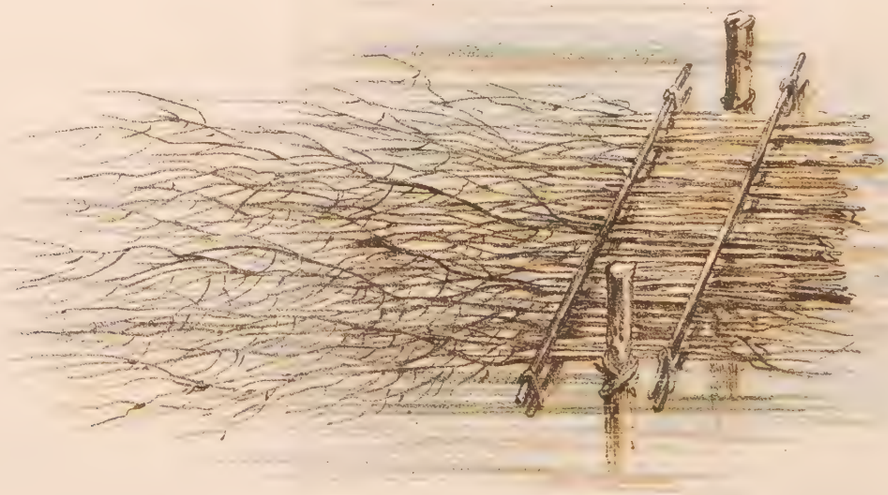


Hurdle.

Fascine.



Slates.



Looe.

J.W.Hart, delt.

Forster & Cº Lith. Dublin.

G.W.Hart, delt
Oct. 1868.

CLAIRES AT MARENNES.

Forster & C.° Lith. Dublin

REPORT ON THE STATE OF THE OYSTER FISHERIES.

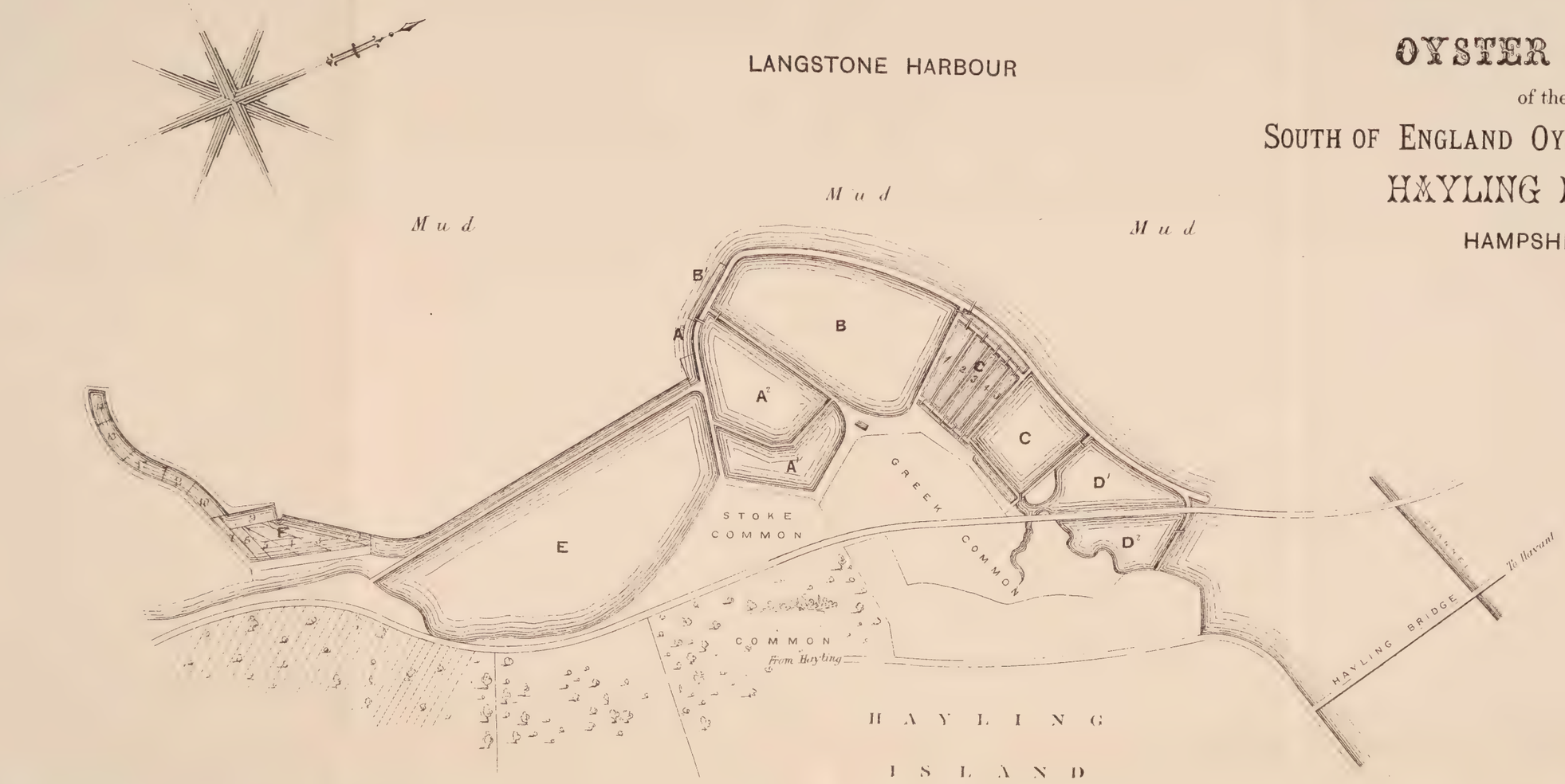
OYSTER FARM

of the

SOUTH OF ENGLAND OYSTER CO., LIMITED.

HAYLING ISLAND,

HAMPSHIRE.



A, B, C, D, E, Breeding Beds.
C1, 2, 3. 4, 5, Winter Beds,
F, 14 Claires in which the young Oysters are laid when detached from the collectors.

Scale

Forster & Co. Lith. Dublin.

MAP

Showing the

DISTRIBUTION OF TEMPERATURE

OVER

IRELAND,

and on the

SURFACE OF THE SURROUNDING SEA,

BY

Professor Hennessy, F.R.S.

Vice Pres. Royal Irish Academy.

1870.

The dotted black lines close to the coast represent the Isothermals of sea temperature close to the shore in July, at noon.

The blue lines the Isothermals of mean annual temperature of the sea.

The red lines the Isothermals of mean annual temperature of the air.

For an explanation of the Isothermal lines see page 72 of the Report,

× Shows where Oyster Banks exist.

Scale 27 Miles to One Inch

10 5 0 10 20 30 40 50 Miles.

Forster & Co Lith to H.M. Stationery Office, Dublin

Salmon Fisheries, England & Wales.

C. 791. Ninth Annual Report of the Inspectors of Salmon Fisheries (England & Wales)

The above, being a folio paper, will be found in Vol XVII.